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CHANGES OF LAKE LEVELS.

A paper by G. K. Gilbert, of the United States Geological Survey, on "Modification of the Great Lakes by Earth Movement," has just been published in pamphlet form from the National Geographic Magazine. This paper is of especial interest to dwellers near the lakes. Mr. Gilbert concludes that Lake Ontario is increasing slowly in area by the rising of the outlet. He says: "Lake Ontario lies altogether southwest of the isobar of its outlet, and the water is encroaching on all its shores. The same tilting that enlarged it from the area marked by the dotted line of figure 2 is still increasing its extent. The estimated vertical rise at Hamilton is six inches per century. The whole coast of Lake Erie also is being submerged, the estimated rate at Toledo and Sandusky being eight or nine inches per century.

A rise of lake levels is far more desirable than a gradual subsidence. Temporary fluctuations from drought or excessive evaporation are not considered at length. Mr. Gilbert says: "The slow changes of mean water level are concealed from ordinary observation by the more rapid and impressive changes due to variations of volume, but they are worthy of consideration in the planning of engineering works of a permanent character." He expects that uplifted on the north and subsidence of land level on the south will cause "Lake Michigan-Huron-Erie" to drain southward by Chicago in 2,000 years.

PORTAGE LAKE IMPROVEMENTS.

Major G. A. Marr, of the United States Engineer Corps, in charge of the Portage Lake improvements under Major Sears, of Duluth, says that there is a depth of from 18 to 21 feet through the whole of Portage Lake, river and entry, so that any boat that can get through the Limekiln Crossing will have no trouble in the canals. These are now in the best shape they have ever been. Major Marr expects that when the government fully realizes the great importance of this passage it will widen the channels at least 50 feet more. Two dredges are still at work at the Portage entry and will continue there until the close of navigation.

UNITED STATES CONSULAR REPORTS.

Under date of July 1, 1897, Consul-General Pratt, of Singapore, calls attention to a previous report in which he advocated the establishment of a direct steamship line between the Straits settlement and New York (see Consular Reports No. 177, June, 1895, p. 210). The consul-general says that in April, 1896, a direct service was inaugurated, to be continued at fortnightly intervals. The manifest of one of the steamers is inclosed and another is sent under cover of a report dated July 24, 1897. The articles imported at Singapore include iron safes, freezers, hardware, stoves, pumps, refined petroleum, drills, bolts, iron pipes, well supplies, boilers and appliances, rope, firearms and cartridges, jewelry, whistles, bicycles, pens, shoe dressing, scales, ice molds, smoking tobacco, axes, yellow pine, sewing machines, perfumery, merry-go-rounds, phonographs, lawn mowers, bird cages, and miscellaneous tools. Iron pipes, well machinery, and boiler appliances were the chief articles.

DETERMINING THE MERIDIAN.

Albany, N. Y., has made an innovation which Mayor Thacher believes other cities will follow. It is a "meridian line" which is being placed in position diagonally across the sidewalk at the southwest corner of the city hall.

A bronze tablet will be placed on the city hall on which will be inscribed the latitude and longitude of the city of Albany, with another appropriate inscription prepared by the mayor. The meridian line, though yet incomplete, has convinced a number of persons that they have been in error regarding the direction of the various streets in Albany.

The idea of a "meridian line" first struck Mayor Thacher

while making a visit to a cathedral in Milan, Italy. He noticed a brass strip in the floor and upon inquiry learned that it was intended to establish the direction of north and south.

VESSELS CLASSED.

The American Shipmasters' Association, New York, classed this week in the "Record of American and Foreign Shipping" the following vessels: Steamer, City of Columbia; half brig, Caroline Gray; schooner, Ella Clifton; three-masted schooners, Helen L. Martin and Nokomis; barks, Thomas A. Goddard and Virginia and the British schooners Carrie Easler, Dennis J. Melancon and E. Norris.

SUEZ CANAL TRAFFIC.

A statement from Consular Agent Broadbent, dated Port Said, July 19, 1897, to Ethelbert Watts, Vice Consul General at Cairo, dated July 26, shows the number of ships, with net tonnage and traffic receipts, which have passed through the Suez canal during the first six months of 1897:

Nationality.	Number of Ships.	Net tonnage.	Traffic Receipts.
British.....	908	2,765,657.62	\$5,024,957
French.....	101	254,915.46	485,367
Dutch.....	106	194,506.10	364,797
German.....	161	425,456.41	771,060
Italian.....	39	66,114.23	132,110
Norwegian.....	28	46,700.94	84,159
Russian.....	19	61,854.52	141,480
Austrian.....	37	89,764.92	160,557
Spanish.....	27	80,129.46	158,875
Japanese.....	18	46,101.88	84,507
Chinese.....	2	2,597.11	4,692
Ottoman.....	4	4,479.95	11,909
Egyptian.....	3	3,401.27	7,057
Siamese.....	1	1,279.99	2,382
United States.....	1	683.56	1,230
Danish.....	2	1,043.97	1,880
Mexican.....	1	551.28	956
Total.....	1,458	4,045,238.67	7,437,975

NEW CANADIAN STEAMERS.

A dispatch from Montreal says: The Richelieu & Ontario Navigation company has decided to build two new steamers, at a cost of \$275,000 to \$300,000 each, modeled on the lines of the Priscilla, of the Fall River Line. The designer of the Priscilla, Mr. Haggengstrom, will assist Mr. Bertram, of Toronto, in the construction of the two boats. Col. Henshaw, one of the R. & O. directors, left in the spring for a thorough inspection of the boats in American waters, and after traveling on the Fall river, the Albany and the Champlain and New York steamers he returned with a report in favor of the Priscilla. The new boats will be 277 feet in length, just seventeen feet shorter than the steamer Quebec. They will have sleeping capacity for over four hundred people and will be licensed to carry fifteen hundred. The dining room will be on the second deck, and walled with plate glass, so that the passengers while dining can enjoy the prospect as they glide on the water. The specification calls for a maximum speed of twenty knots an hour and a minimum of eighteen. This means that the boats, instead of leaving Toronto at 2 o'clock in the afternoon, will leave just four hours later, and arrive on schedule time at Prescott. There will be fifty thousand dollars spent on interior decorations on each boat. The first steamer will be ready by July 1st and the second three weeks later.

Capt. J. H. Rogers, who for two years and a half has been in command of the revenue cutter Dallas, stationed at Boston, has received orders from Washington detaching him from the Dallas and ordering him to proceed at once to Detroit to take command of the revenue cutter Fessenden. He left for his new post yesterday.

ANOTHER ROLLER SHIP.

Designing and patenting roller boats seems to have become a craze. Within the past year or two such craft have been devised by an English carpenter, a French civil engineer, a Venezuelan professor, a Canadian barrister, a French baron, several Americans, and lastly a Scottish teacher. This last is the invention, says the Liverpool Journal of Commerce, of one Thomas Connor, Glasgow. He says that his invention relates to what is known as roller ships or vessels, and it has for its object to improve their construction. The ship is to be made with six large wheels, or rollers, which are hollow and of sufficient buoyancy to support the main structure of the vessel. The large buoyant wheels are preferably disposed as follows: One at the bow, four amidships, arranged in pairs, and one (a steering wheel) at the stern. The four wheels amidships are to be arranged to be controlled and driven by a single engine. The bow and stern wheels may be driven by gearing from the main engine, or by a separate engine, or, if desired, these wheels need not be propelled. Each driving wheel is to be provided with flutes, paddles, or equivalent, whereby they can be made to grip in the water like an ordinary paddle-wheel and urge the vessel forward. The wheels with their paddles are preferably fluted, or ribbed circumferentially, in order to strengthen them. The paddles can be either fixed or movable. The steering of the boat is a special feature of the invention. It is effected by the stern wheel or roller, which is mounted in bearings on a horizontal turntable, which is capable of revolving in grooves or other bearings in the structure of the body of the ship. The turntable with its roller is revolved, when it is desired to steer the ship, by means of a steering engine and chains in the manner at present in vogue on steamships. The body of the ship may be constructed on the platform principle. No part of the body of the ship is in contact with the water, the large buoyant wheels being alone in contact therewith, and supporting the whole structure. Any number of buoyant wheels can be used in the construction of the vessel. Under this invention the ship is directly urged forward by the action of the paddles of the buoyant wheels.

On paper this scheme seems to possess several advantages not found in patents covering other roller ships. If a model is made of Mr. Connor's vessel, no doubt the experiment will be watched with as keen an interest as that taken in the craft lately tried at Havre.

COMMERCE OF THE LAKE REGION.

A line drawn from Buffalo through Pittsburg to Denver and northward to the Arctic Ocean will hardly circumscribe the area, all of whose roadways, so to speak, lead to the lakes. This great basin is the treasury of the continent. It contains the great deposits of ore and fuels, it manufactures most extensively, it almost feeds the nation, it produces the larger portion of our exports, save that of cotton, and it consumes the larger portion of our imports.

Some, at least, of the millions populating this basin know that it costs almost as much to trans-ship their cargoes at Buffalo as it does to carry these the entire length of the lakes. They see that they pay as much for carrying a bushel of grain from Dakota to Liverpool as will carry two and a half competing bushels from Argentine. They know further that if their ships, once afloat on the Great Lakes, could go on to the ports of the Atlantic in uninterrupted course, they would be put in touch with the new or greater markets, which are now entirely cut off from a part of their products and to reach which they pay dearly for the rest. There is little doubt, in view of the steady cheapening of the lake rates, that in a few years a cargo could be carried from Chicago or Duluth to New York and perhaps in time to Liverpool, for little more than the present carriage to Buffalo.—Review of Reviews for November.

NEWS AROUND THE LAKES.

CHICAGO.

Special Correspondence to The Marine Record:

At the dry-dock here the barge D. P. Rhodes was in dock for searching up and bottom calking.

The light-house tender Dahlia returned from Milwaukee last week with a new Beck No. 5 steam steerer with all latest modern improvements which had been placed on her by Pawling & Harnischlger, of Milwaukee. It works very satisfactorily. The placing of the new steam steerer necessitated compass readjusting in the pilot house. John Maurice, of Chicago, did the adjusting, which was a very difficult job, as the action of the north and south poles was rendered useless by the metal in the steerer and the compass was six points out on east and west courses.

Johnston Bros., boiler makers, Ferrysburg, Mich., have contracted to build for the H. W. Williams Transportation Co. one Scotch type boiler 11 feet diameter, 12 feet long, and one marine fire-box boiler 7½ feet diameter, 13 feet long, to be placed on two of the company's steamers during the winter.

The steamer Pontiac discharged a cargo of 3,145 tons of Black Horse coal at the O. S. Richardson Fueling Co.'s north pier coal dock last week.

Capt. Thos. Beggs has been promoted by the Ward Transportation Co. from their steamer Niko to the steamer E. M. Peck, which the company have recently chartered. The Peck will tow the Churchill. Capt. David Beggs, brother of Tom, has been appointed master of the steamer Niko. The Niko will tow the barge Tasmania.

The stocks of grain in Chicago elevators on last Saturday evening were 3,657,000 bushels of wheat, 19,730 bushels of corn, 1,704,000 bushels of oats, 878,000 bushels of rye, and 455,000 bushels of barley. Total, 26,424,000 bushels of all kinds of grain, against 26,341,000 bushels a year ago. For the same date the secretary of the Chicago Board of Trade states the visible supply of grain in the United States and Canada is 29,046,000 bushels of wheat, 45,103,000 bushels of corn, 15,389,000 bushels of oats, 3,818,000 bushels of rye, and 4,115,000 bushels of barley. The figures are larger than the corresponding ones of a week ago by 2,072,500 bushels in wheat, smaller by 855,000 bushels in corn, and larger by 25,000 bushels in oats. The visible supply of wheat for the corresponding week of a year ago increased 393,000 bushels.

The tug A. G. Van Schaick, recently purchased by the Independent Tug Line, has been in their floating dry-dock and received a thorough overhauling and re-calking, also a new wheel 6 inches larger in diameter and of a different pitch to her old wheel, which improves her running and pulling one-third more. She is a good addition to the line's fine fleet of tugs and is an excellent boat for harbor towing.

The Anchor Line steamer Seneca received some damage to her bulwarks forward on her starboard side when going through State street bridge, going out early Sunday morning. The accident was caused by the bridge tender swinging the bridge around too far.

On Saturday, the schooner T. Y. Avery was at the derrick at the O. S. Richardson Fueling Co.'s north pier dock for the purpose of unshipping her foremast, the fore topmast had been sent down and the rigging and gear nearly all taken from the lower mast, when it broke off close to the deck and fell over on to the dock. Frederick Johnson, one of the seamen, who was up the mast about 40 feet from the deck, fell with it. He was rendered insensible from the fall but soon recovered and fortunately no bones were broken.

The Western Transit Co.'s transfer steamer McCormick left here Tuesday night for Buffalo in charge of Capt. Frank Cox.

J. J. Rardon & Co. chartered the steamer Henry Chisholm for corn to Owen Sound at 1¼ cents, steamer City of London for corn to Erie at 1 cent.

Capt. John Prindville chartered the steamer Oscar T. Flint for corn to Owen Sound at 11-10 cents; the steamer Lansing for clipped oats to Buffalo at 1 cent; the steamer Pontiac for corn and barley to Buffalo, at 1 cent.

H. W. Cook & Co. chartered the steamer Bermuda for oats to Buffalo at 1 cent; steamer Panther for clipped oats, Manitowoc to Buffalo, at 1 cent; steamer Katahdin for lumber, Grand Marais to Chicago, at \$1.62½ per M. feet; steamer John Otis for lumber, Menominee to Chicago, at \$1.12½.

Capt. J. S. Dunham has had his schooner City of Sheboygan and America stripped and put into winter quarters.

DETROIT.

Special Correspondence to The Marine Record.

The model for the new Cleveland and Buffalo steamer has been completed and the material for the boat is arriving at the Wyandotte plant, where she is to be built. Though the time—six months—allowed for her completion is short, the company has such facilities on hand that it will be able practically to complete the contract, and will undoubtedly have it, the handsomest steamer, out on time. The Detroit Dry Dock Co. is one of the most reliable shipbuilding firms on the lakes.

While there is plenty of down freight, the up loads are light, and the State of Michigan will probably be withdrawn at the close of her present trip. It is said the Flint & Pere Marquette and Detroit, Grand Haven & Milwaukee roads are figuring for her services as a winter boat on Lake Michigan.

Capt. Reid has returned to the wreck of the steamer Cayuga. He had been driven away by the gale. He will continue at work trying to get the steamer afloat before winter sets in.

The car ferry between Sandusky and Detroit will open for business this week. The barges Tycoon and Mikado are now at the Baltimore & Ohio dock at Sandusky, having arrived in tow of the tug Champion, and will take on nine cars of coal each and leave for this port on their initial trip. An immense amount of coal awaits shipment via this route.

The Detroit Dry Dock Co. closed a contract Saturday with Maurice McMillan, of Detroit, and E. C. Dunbar, of Grand Haven, for a steel screw steamer, to be 160 feet long, to have a speed of fifteen miles an hour and to cost \$75,000. Half a dozen of the passenger steamers on Lake Michigan are speedier, but she will nevertheless be a good boat. Her power will be triple expansion engines, with Howden hot draft. She will somewhat resemble the Wyandotte. Mr. Dunbar is the founder of the line between Michigan City and Chicago, on which the new boat will be put. For three years he has operated the small steamer Taylor on the route, and says his success has been such as to warrant the larger boat. The freight business is especially good, helped out by the Wheeling & Lake Erie road and the quantities of fruit shipped to Chicago from Indiana in the summer and fall. The boat is to be finished in the spring. Mr. McMillan is the youngest son of Hugh McMillan, president of the dry-dock company, and a brother of Secretary Gilbert McMillan, of the company.

Capt. Root has sailed a score of years or more and has commanded the schooners Unadilla and the Wabash, steamer Russell Sage. Charles B. Calder, superintendent of the Detroit Dry-Dock Engine Works, recalls an instance of shipwreck in which Capt. Root was the only survivor. "He was younger than he is now," said Mr. Calder yesterday; "a big, powerful, nervy man. He was in charge of a schooner which was run into by a steamer on Lake Huron. It was in the night and the steamer lost her from view. The yawl was lowered, the crew entered and the vessel went to the bottom. The heavy seas capsized the yawl and every man was swept away, except Root. He reached for the painter and tied it around his waist, and as the sea swept him off he hauled himself back by means of the rope. In time the yawl drifted ashore, on a sandy beach, and Root was carried high on the beach. The month was September and the water was cold enough to chill him badly, and he had still life enough left to crawl away and rub his blood into circulation again. Then he went to the nearest shanty, told his story and was well cared for."

John P. Mackinnon, formerly a millionaire lumberman and promoter of Philadelphia and Cheboygan, Mich., committed suicide Sunday night by jumping overboard from the steamer City of Alpena, in Lake Huron. He was not missed until the boat reached Detroit, when many of his personal belongings were found in his stateroom, together with a letter.

The management of the Detroit & Cleveland Steam Nav. Co., has not decided when the service between Detroit and Cleveland will be suspended for the winter. The movement of freight is large enough to be profitable and the indications portend a continuance of good business. It has been stated that the company would likely keep its boats on this line in operation until the opening of the new year. A decline in the freight traffic would cause their removal, but it is predicted that business will continue good. Last season Lake Erie was open until the second week in January.

The Detroit Dry Dock Engine Works have orders booked for an entire winter's work and another enlargement of the plant may be looked for in the near future. Mr. C. B. Calder, superintendent of the works, is generally liked at all lake ports and no doubt he accelerates the business of his firm, who otherwise enjoy an excellent reputation for speedy and high classed work.

Capt. J. H. Rogers, the new commander of the Fessenden, is a brother of Col. J. S. Rogers, of the Michigan military academy at Orchard Lake. He is both a sailor and a soldier, which is something unique to say the least. When the bugle sounded Lincoln's call for troops he went to the front with the Second Maine infantry and his brother went with him. Both were promoted for personal bravery on the field of battle. After his discharge from the army he shipped in the navy and was in several engagements during the latter part of the war. When fighting was over he resigned and entered the revenue service as third lieutenant.

It is said that Capt. Hodgson, late of the revenue cutter Fessenden, will make a long trip on his new command, the McCulloch. It is thought that she is to be one of the five revenue cutters which will be stationed in Alaskan waters to enforce the new sealing agreement just entered into by the United States, Russia and Japan. The others will be the Rush, Bear, Grant and Perry. She will go to San Francisco by the eastern route through the Mediterranean, the Suez canal, the Indian ocean, and across the Pacific, touching at Japan and Hawaii.

The lighthouse tender Amaranth went into dry dock this week for a new wheel. A sectional wheel will be shipped. When the Amaranth was built in 1892 she was fitted with bilge keels. They are used on a few vessels on the lakes, and have proved to be very satisfactory. While they retard the speed of the vessel a little, this is more than made up when the stability is considered. "The Amaranth is very steady," said her commander, "and the bilge keels do it. For an experiment, I have often stopped the engines and laid her in the trough of the sea just to see what she would do. She has never rolled hard enough to roll the books off the table in my cabin."

The steamer Clyde which reached Port Huron on Wednesday will dry-dock here for calking and other repairs.

The contracts have been let by the Detroit & Cleveland Steam Navigation Co. to the Detroit Dry-Dock Co. for the

improvements to be made upon four of the former company's fleet this winter. The Alpena and the Mackinac are to receive another tier of staterooms, and the Detroit and Cleveland are to have a few more added to the upper tier. All the dining-rooms are to be rebuilt and fitted with the patent ventilating apparatus used so successfully upon the City of Buffalo.

CLEVELAND.

Special Correspondence to the Marine Record:

Capt. Allen, of the schooner Juno, hailing from Walkerville, Ont., was in port this week with his smart little craft. The captain is one of the most intelligent and oldest captains in the Canadian mercantile marine service on the lakes and I was pleased to meet so worthy a man hailing from across the border.

Mr. N. B. Conger, inspector and marine agent for the Weather Bureau, Department of Agriculture, was in the city this week and consulted vesselowners relative to the value of the meteorological work now being carried on and contemplated by the bureau. Mr. Conger also visited Buffalo.

The first of the fall gales has been experienced during the week and all passenger boats were behind time in making their trips on several occasions.

The gate for the new dry-dock at Lorain is about ready for shipment from the yards of the Cleveland Ship Building Co.

Mr. Robert Wallace, president of the Cleveland Ship Building Co., has spent the greater part of the summer at Lorain superintending work on the new shipyard and dry-dock at that port. His numerous friends will be pleased to learn that the extra outside work seems to have agreed well with him, inasmuch as he looks robust, bronzed and is enjoying capital health.

Mr. William H. Searles, member of the Civil Engineers' Club of this city, read a very interesting paper at a recent meeting on the advantages of having a consulting engineer in municipal affairs. Mr. Searles very pertinently suggested that the present is the most opportune time for making the innovation here, on the eve of enterprise heretofore unparalleled in this city, and requiring expenditures of money beyond all previous estimates. Naturally, in undertaking a new voyage the first step is to provide a pilot. The city of Cleveland would have profited greatly in the past from the services of a permanent consulting engineer; for the future his services will be found to be absolutely indispensable.

Lient. Stafford, U. S. N., in charge of the Cleveland branch hydrographic office, says that the Dominion government is preparing, or at least considering, the establishment of either telegraph or telephone connections with the Dummy. By establishing communications with that point the Canadian government will perform an invaluable service for the American lake interests, although it will not be of much service from a Canadian standpoint.

Some people were surprised when the Lehigh liner Tuscarora cleared promptly for Chicago again, instead of going into dry-dock, after having been on a rocky shore since leaving here last; but it is stated officially that she was not at all injured and will finish her season as though she had met with no accident. That comes of having vessels built somehow, someone remarks.—Buffalo Courier-Record. The Tuscarora was built by the Globe Iron Works Co., of this city.—Cleveland Plain Dealer. The Globe have always built good ships, and the Tuscarora is no exception. The pounding which the Seneca got on the beach at Buffalo a few years ago would have almost made a constructive total loss of that vessel if she had not been a well built craft, and she is another of the Globe Iron Works Co.'s build.

Capt. Hiram Henderson, owner of the schooner Typo, has instituted legal proceedings to recover damages for the detention of his boat, Spence Bros. being the defendants. The vessel was chartered to carry a load of rock from Bruce mines, Georgian Bay, to Cleveland. The freight was 60 cents a ton on 250 tons. The owner claims that the boat was delayed at the mines for several days before loading. The Typo left the dock on October 26, seven days late, according to the claim made. On November 4 she reached Cleveland and is not yet unloaded. For damages Capt. Henderson asks \$680. One of the city's fire boats may also be libeled for damages by the same owner. It transpires that while the fire tug John Farley was steaming along the river near Seneca street in response to an alarm, she collided with the schooner Typo and damaged the Typo's stern. Capt. Henderson said that unless the city paid him \$200 damages he would libel the fire tug. Director Hechler said the damage would not exceed \$100, and he would not pay even that sum, as the reports of the accident indicate that the firemen were not to blame for the collision.

The Corrigan Line schooner Amazon loaded 205,000 bushels of wheat at Fort William on her last trip down. The largest grain carrying records are 225,000 bushels of corn, 205,445 bushels of wheat, and 318,000 bushels of oats.

General freight and passenger agent W. F. Herman, of the C. & B. company, announces that it will not receive freight later than Monday, November 29, in Cleveland.

General Manager Newman, of the Cleveland & Buffalo Transit Co., decided to take the steamer State of Ohio off the Buffalo route this week. She will go to Lorain into winter quarters. Quite a little work will be done on her by the Cleveland Ship Building Co. The steamer State of New York will also be laid up at Lorain for the winter. The City of Buffalo will run on the Buffalo route until Dec. 1. She will then go to Detroit to lay up for the winter.

Captain James Davidson, of Bay City, visited this port Wednesday.

Alexander Gillies, the lost captain of the Idaho, landed in New York in 1882. A little more than seven years ago he went back to Scotland and was married in Glasgow, where

his parents were. He returned immediately after his marriage and resumed his hazardous occupation on the lakes. His immediate family consisted of only his wife and himself. His mother is now living alone in the Isle of Islay. Two sisters are in America, one in Ohio and the other in Newport News, Va. A brother and sister live in Glasgow.

The handling of the Mariposa in taking her alongside of a spar in a gale of wind is highly spoken of among vesselmen. Mr. Coulby wrote to the captain this week as follows:

WESTERN RESERVE BUILDING,
CLEVELAND, O., Nov. 7, 1897.

DEAR CAPTAIN: I have just had a talk to Hebard about your noble act of rescuing the two poor fellows of the Idaho's crew. We all of us here feel very proud of the brave crew of the Mariposa. I wish you would call us up in the morning and give us the details of the rescue. To take your boat alongside three times in such a heavy sea and accomplish what you did reflects the greatest credit upon the seamanship, coolness, and bravery of yourself and your crew, but the act of humanity in standing by to rescue those two poor helpless beings, jeopardizing your lives to save those who seemed beyond the power of human aid, proves you a hero in the true sense of the word, in addition to being in the front ranks of your profession. The discipline of your crew must have been perfect to enable you to accomplish what you did. With kind regards. Yours very truly,

H. COULBY,

Captain F. D. Root, Steamer Mariposa.

There is no doubt but that Capt. Root is entitled to all the credit he has been receiving, for to lay a 4,000-ton steamer alongside of a stick of timber and pick one or two men off is a feat in handling a steamboat.

The Cleveland Dry-Dock Co. docked this week the steamer Raleigh for a general overhauling and to be calked inside and out.

The steamer Josephine docked in the Ship Owners' dry-dock for a new forefoot, some new bottom planks, calking, etc.

The buoys in this district will be taken up and replaced with winter buoys on or about the following dates: Those at Dunkirk about November 15; at Erie, including gas buoy, November 18; Sandusky and Island buoys, November 20; Maumee bay, including gas buoy, November 22; Detroit river, Dec. 1. The light vessels at Ballard Reef, Limekiln Crossing and Bar Point will be left in position as late as circumstances will permit, probably between December 5 and 10. The position of the latter vessel will be marked by a black buoy. Waverly shoal buoy and the buoys in Niagara river will be kept in position as late as the season will allow.

Wreckage from the foundered steamer Idaho is being picked up daily and there is now very little hope that any other survivors will turn up. Two bodies were passed but they were not picked up owing to stress of weather.

BUFFALO.

Special Correspondence to The Marine Record.

Every vessel man is loud in the praise of Capt. F. D. Root and the skill and bravery he displayed in saving the two shipwrecked men clinging to the spar of the Idaho in Lake Erie Saturday noon. In making this rescue he was compelled to circle the wreck three times before he could get near enough to grab the men. His employers, Pickands, Mather & Co., of Cleveland, the Minnesota Steamship Co., have written him a congratulatory letter, through their manager, Mr. Coulby, applauding his work and the discipline he must have had the crew under to accomplish the feat. All hands proclaim it a smart piece of seamanship in handling a 4,000-ton steamer so as to lay her almost at a standstill alongside of a stick of timber in a gale of wind and pick a man off the wreck.

What, to vesselmen, seems the announcement of the close of navigation, is the statement that the steamer Ericsson and consort, two of the big boats of the Bessemer Steamship Co., Rockefeller's fleet, are going into winter quarters at Lorain. The other boats of the fleet will be laid up as soon as they can get around. This seems to mean but one thing, that the iron ore trade for the season is nearly at an end, or at least that part of it controlled by the Rockefeller firm and their line boats.

Mr. A. A. Parker, senior member of the firm of Parker & Millen, Detroit, was here this week, so also was Mr. Pridgen, ex-mayor of Detroit.

The steamer A. A. Parker was docked in the Mills dry-dock for bottom calking.

The Lizzie Madden and her consort Mautenee grounded at Strawberry Island while going down to Tonawanda. The Mautenee had to lighter part of her cargo before being released. The steamer came off easily and without damage.

The various transportation lines doing business in the Lake Superior region are notifying their connections that the season of navigation is about over. The Lake Superior Transportation line is the first to quit. The Union Transit Company are the next in line, and its boats make their last trip one week from Saturday. The Western and Anchor lines will follow suit a week later. The Northern Steamship Company will continue to receive freight until November 27, and then close the season of 1897.

The lengthening of the south dock at the Union shipyard is now in progress, and when it is done the dock will be prepared to take in boats 450 feet long and 50 feet beam. The work will take about three months. When the dock is finished there will be room for laying the keel of the next steamer for the Union Steamboat Company, and work will then begin on her.

"I simply can't express my admiration for the skill and coolness displayed by Capt. Root in his handling of the Mariposa when rescuing our men," said Mr. Douglass. "I

never heard of anything better done in my life. It was simply a marvel of skillful management, and the man who could perform it must be a gallant fellow, a sailor and a disciplinarian. I hope he will get a medal from the United States government. I have sent him a letter thanking him as warmly as I know how. I don't know him, but I hope to some day, and in the meantime if he ever wants anything in the line of a boat, and it is within my power to get it for him, the simple announcement of his name will settle the question."

The Merchants Exchange have passed resolutions this week extolling Capt. Root and asking the government to award suitable recognition of his services in saving two lives and presenting him with a medal for special skill and bravery.

The Davidson steamer Rappahannock has been libeled here for \$5,650 on the complaint of the steamer Yale, which some time ago ran into the dock and the steamer United Empire at Port Huron, doing considerable damage. The accident is claimed to have occurred on account of the blocking of the channel by the Rappahannock, which was trying to release her consort, from the middle ground, where she had grounded. The owners of the Rappahannock claim the other vessels passed her safely and that the Yale might have done so. They will therefore bond the Rappahannock and stand suit.

The government has taken no steps to fill the position of hull inspector, made vacant by the death of Capt. Marion, and has not replied to the notification of his death. The office is under civil service rules, a qualifying as well as competitive examination being necessary to appointment. For this reason the aspirants for the place have been rather shy of it so far and no pronounced candidates have been heard of. Supervising Inspector Galvin has assumed the duties of the office and will perform them until the new appointment is made.

FLOTSAM, JETSAM AND LAGAN.

The coroner's inquest at Port Huron has developed the fact that Captain Riley died of fatty degeneration of the heart.

Tuesday night the steamers Henry Chisholm and Western liner Boston collided at Milwaukee. The Boston suffered slight damage.

The Lake Michigan coal rate was marked up to 50 cents Monday. Tonnage is in good demand all around and vesselmen are hopeful of getting a better rate to the head of Lake Superior during the next few days.

One of the life-boats of the ill-fated Idaho was picked up Monday by the schooner Sir C. T. Straubenzie while on her way to Cleveland from Port Colbourne. It was marked No. 1 and looked as if it had been used pretty roughly.

The steamer John Ericsson and schooner Alexander Holley, of the Bessemer fleet, are laying up at Lorain, and the other boats of that fleet will be laid up there as they get around. Most of the small consorts are being dropped, and quite a few boats will be laid up by the end of the week.

When the Ohio & Michigan Transportation Co's. barges Mikado and Tycoon were tried in the slip dock of the Grand Trunk road at Detroit it was found that someone had blundered, as they did not correspond in details to the plans and specifications, and came nowhere near fitting the dock.

The J. S. Fay, Sarah E. Sheldon and Superior, of the Bradley fleet, are being stripped for winter quarters at Mitchell & Rowland's, Toledo. The steamer Saginaw, owned by Captain Al. Peter, will also go into winter quarters. Captain Clifford, of the Saginaw, will winter in Detroit.

Ex-Mayor Stewart, of Ottawa, is back from London, where it is said he succeeded in interesting British capital in his projected Montreal, Ottawa, Georgian Bay canal scheme. About \$25,000,000 is needed for the work. The canal would furnish an all-Canadian route to the seaboard and a cut of about 400 miles.

It is not known definitely when the branch hydrographic offices at the "Soo" and Duluth will open, but it is said that they will be ready for service by the time navigation is opened next season. The Buffalo office is now assured as Ensign Jewell, U. S. N., has been given the detail and the offices are being furnished.

The steel schooner Amazon, owned by Captain James Corrigan, of Cleveland, loaded 205,000 bushels of Manitoba hard wheat at Ft. William on her last trip down. This is the largest cargo of grain ever carried out of that port, and one of the largest carried in any lake-built bottom. It is consigned to England via Buffalo and New York.

The Toledo Blade says that this week a Cleveland paper gave charters of C. F. Eddy, coal, Ohio ports to Milwaukee, at 50 cents, and the Aurania, coal, Erie ports to Cheboygan, at 50 cents. It also gives barge 104, Ohio ports to Duluth, at 35 cents. A vessel broker here says he has a standing offer for craft, Ohio ports to Milwaukee, at 60 cents, and Ohio ports to Duluth at 45 cents. What is the matter with Cleveland, anyway?

A sandsucker was tested this week at the Vulcan foundry, Toledo, which is to be taken to one of the streams in the mountains of Colorado to suck sand that has gold in it. This sand is found in pools, and heretofore no method has been found by which the sand could be got out. Some of it is in 18 feet of water. The sucker built at the Vulcan foundry will meet every expectation. The sucker or pump is about 3,000 pounds in weight, and will have a hose attached when necessary 40 feet in length.

Pete Peterson, mate of the schooner Emily B. Maxwell, which arrived at Alpena on Tuesday, told a story of the flight of the vessel from Canadian waters and an attempted seizure by a Canadian firm. The Maxwell was in Collingwood, Ont., where her master, Captain Francis Walters, it is claimed, turned over the vessel's papers to T. Long & Bro., merchants

there, for collateral on a loan of \$600, which the captain claimed he would pay on a cargo of lumber for the vessel. It is alleged that instead of doing this Captain Walters deserted the schooner, in fact took French leave, and skipped out with the cash advanced. The Canadian firm then claimed the boat, but Mate Peterson sailed her away in the night for Alpena, and at once reported the entire proceedings to the custom house. The Maxwell is given in Lloyd's register as hailing from Chicago, and a valuation is set on her of \$9,000. Jennie Mullen is given as her owner.

BRITISH SHIPPING AND COMMERCE, ENTRIES AND CLEARANCES.

In 1841 the British mercantile marine amounted to 3,572,000 registered tons, of which only a small portion was steam. The total is now over 13,000,000 tons, of which over 10,000,000 tons is represented by steamers.

Statistics on the subject just issued by the Board of Trade deals with the total entries and clearances at ports in the United Kingdom during the years 1894-5-6. At the middle of the present century, 1850, the tonnage of vessels cleared and entered was under 40,000,000 tons. By 1890 this tonnage had quadrupled, having grown to more than 164,000,000 tons.

But another rebound took place in 1896, when the tonnage advanced by more than eight millions and a half, and reached the total of close on 191 millions. Here are the statistics for the three years covered by the Board of Trade tables:

TOTAL TRADE.		Entrances and Clearances.
Year.	Tons.	
1894.....	182,884,870	
1895.....	182,107,668	
1896.....	190,688,509	

Taking the foreign trade of the United Kingdom alone the results shown are very large, the tonnage of entrances and clearances having increased last year by close on five millions of tons.

FOREIGN TRADE.		Entrances and Clearances.
Year.	Tons.	
1894.....	80,536,359	
1895.....	80,539,174	
1896.....	85,462,513	

TONNAGE IN TOTAL TRADE.		
Year.	British tonnage.	Foreign tonnage.
1894.....	158,078,890	14,805,980
1895.....	157,656,328	14,457,340
1896.....	162,835,911	16,852,598

TONNAGE IN FOREIGN TRADE.		
Year.	British tonnage.	Foreign tonnage.
1894.....	58,661,647	21,854,712
1895.....	58,691,926	21,847,239
1896.....	61,472,134	23,990,288

From the figures quoted, it will be seen that while British tonnage increased by more than five millions in 1896 over 1895, the foreign tonnage increased by a little more than two millions.

With reference to the tonnage of ships that entered and cleared at the principal ports of the United Kingdom from and to British possessions and foreign countries, the leading position is occupied by London, followed by Liverpool, Cardiff and Tyne ports, Hull, Glasgow, and so on. The details are:

FOREIGN TRADE AT PRINCIPAL PORTS.		Entrances and Clearances.
Ports.	Tons.	
1. London.....	15,582,195	
2. Liverpool.....	10,883,024	
3. Cardiff.....	10,805,126	
4. Tyne Ports.....	8,461,572	
5. Hull.....	3,913,909	
6. Glasgow.....	3,191,707	

Were the coasting trade figures taken into account the results in regard to entrances and clearances might be considerably altered. Take, for example, the case of Glasgow. According to the Clyde Trust returns the tonnage of vessels trading to and from the harbor in 1896 was nearer four than three millions. Glasgow takes a much higher place among ports when we come to the table of registered tonnage. Liverpool heads this list, having London and Glasgow as close companions:

TONNAGE REGISTERED AT PRINCIPAL PORTS.		
Ports.	Vessels.	Tonnage.
1. Liverpool.....	2,200	2,072,194
2. London.....	2,740	1,661,084
3. Glasgow.....	1,668	1,536,417
4. Tyne Ports.....	878	495,399
5. Hartlepool.....	284	361,357
6. Sunderland.....	273	279,903
7. Hull.....	809	226,904
8. Greenock.....	291	202,592
9. Belfast.....	250	146,710

The amount of the tonnage registered at all the ports of the United Kingdom shows little alteration for some years back, the total standing at between ten and eleven millions.

The coal shipped out of Cardiff in 1895 amounted to 10,906,000 tons and in 1896 it increased to 11,442,000 tons and from Newcastle the amount was 4,407,000 tons.

WATER-TUBE BOILERS.

In his annual report to the Secretary of the Navy, Commodore Geo. W. Melville, Engineer-in-Chief, U. S. N., Chief of Bureau, thus treats the water-tube boiler question:

The gradual replacement on war vessels of the familiar cylindrical boiler by various forms of the water-tube boiler constitutes the most important fact in marine engineering at this time. For torpedo boats their superiority was so evident that they quickly displaced the older type and have been used exclusively for some years, although their first appearance (on the *Ariete*) was only ten years ago. The particular form used in torpedo boats is, however, of such light scantling that hitherto there has been a fear that its longevity would not be sufficient to warrant the use of such boilers in large vessels. A different form has been in use in the French navy since 1879, and has also been used in other navies, in some very extensively, but the saving of weight due to its use, has not been so great as seems desirable if the cylindrical boiler is to be definitely abandoned.

In 1888, this bureau, alive to the supreme importance of light machinery for naval vessels, advised the department to invite a competition of manufacturers of water-tube boilers with a view to the adoption of the successful one for use in a naval vessel. As a result of this action, coil boilers were installed in the *Monterey* in 1892, and have been in successful use ever since. This was the first instance of the use of light water-tube boilers for a large power (over 4,000 I. H. P.) on a large ship.

It would have been easy for the bureau to gain a cheap reputation for progressiveness by adopting this type of boiler at once for all ships, but there had not been sufficient experience in the use of these boilers for extended cruising at sea to make such a step judicious and for the highest efficiency of the fleet. The *Monterey* was expressly designed for coast defense, so that she would always be near repair shops if necessary, and her case was different from that of ships designed for general cruising. The conditions of the building of our new navy made it imperative that every unit should be absolutely reliable. We were not adding to a navy up to date, but were replacing obsolete ships with modern ones. With only three battleships in commission, we could not experiment on the few additional ones authorized. Consequently, although realizing the advantages of a reduction of boiler weights, if obtained without sacrificing reliability, the bureau has used cylindrical boilers in the recent battleships.

Meanwhile experience of our own has been acquired from the service of the *Monterey*, the *Cushing*, and the *Ericsson*, and careful attention has been paid to what is doing in the merchant marine and in foreign naval services. The last report of the bureau showed the adoption of Babcock & Wilcox boilers for the *Chicago* and for the *Annapolis* and the *Marietta*. Since then it has been decided, in the modernizing of the *Atlanta's* machinery, to use this same make of boiler for about two-thirds of her power. The *Nashville* has Yarrow boilers for about the same fraction of power. As is shown elsewhere in this report, the *Annapolis*, *Marietta*, and *Nashville* have passed their contract trials successfully and their water-tube boilers were entirely satisfactory.

The bureau feels that, with the experience now gained, the efficiency of the fleet will be best served by using water-tube boilers on future ships. As yet it can certainly not be said that any one of the numerous varieties of water-tube boilers is absolutely the best. Some of the ablest engineers in the world who, to cultivated talent add vast practical experience, have identified their names with particular forms of this type of boiler, and it is probable that, as experience accumulates, a form of boiler will be evolved embracing the best features of all of them. With respect to the form used on our recent ships—the Babcock & Wilcox—it may be said that it is a marine form of their well-known land boiler, which is used extensively all over the world, and which has all essential features in common with a number of other well-known land boilers, so that the fire-room force of our ships is more likely to have some acquaintance with this boiler than others of the type. The straight tubes can be readily removed and replaced, and can be purchased wherever engineering materials are kept in stock. As has been stated, the Ward boilers of the *Monterey* have been in successful use for about five years. They were recently re-tubed in place by the force on board, thus demonstrating practically one of the advantages of boilers of this type. However, the bureau does not advocate any one form of boiler to the exclusion of the rest, but believes that the best results will come from giving contractors freedom of choice of a form of water-tube boiler, subject to certain conditions of scantlings,

general design, and workmanship which the bureau is prepared to lay down.

LIQUID FUEL.

The advantages to be derived from the use of liquid fuel instead of coal for certain classes of ships are so great that nearly every naval power has devoted considerable attention to the subject, and has conducted experiments with a view to determining the best apparatus and the necessary conditions. Our country being the greatest producer of petroleum, it is only natural that the subject should have received attention from this bureau, and from 1867 to the present time the bureau has, at intervals, conducted experiments with various forms of apparatus and various kinds of fuel oil, the last having been noted in its report of last year. An experiment on a larger scale has also been authorized by the department, which, on the recommendation of this bureau, has made a contract for one of the new torpedo boats to be fitted for burning fuel oil. An exactly similar boat, building by the same contractors, will burn coal, so that an excellent opportunity will offer for a comparison of the two fuels.

That fuel oil has not hitherto been used for naval purposes is due to the items of cost and difficulty of purchase, except in a few localities. On the Caspian Sea, where petroleum refuse is plentiful and cheap, it has been in successful use for more than fifteen years. Experiments made about ten years ago by the Pennsylvania Railway Co., under the direction of Mr. Theo. N. Ely, chief of motive power, showed the entire practicability of burning "reduced oil," but the question of cost made its use, except in special cases, impracticable, as well as the fact that this railway, if using oil fuel to the exclusion of coal, would at the time have consumed more than one-third of the entire output of petroleum in the United States. It is therefore quite evident that as far as can now be seen, there is no prospect of the use of fuel oil in replacement of coal on vessels employed in general cruising. Inasmuch, however, as the traditional policy of our navy has been a defensive one, it is probable that our torpedo fleet would operate on our own coast only, so that if we can afford the cost we might readily adopt oil fuel for this class of vessels if, in extended practice, it proves as successful as the experiments lead us to anticipate.

The petroleum refuse or "residium" already referred to (which closely resembles the "reduced oil" of the Pennsylvania Railway experiments) has been tested so thoroughly that we are able to calculate the effect on radius of action of its use instead of coal. Its evaporative power is from 1.5 to 1.7 times as great as that of coal, and it can be "pulverized" or "atomized" with either compressed air or steam. The use of the latter is simpler, but involves an extra supply of fresh water to replace that spent in the pulverizers. However, in good forms of apparatus this amount is less than 2 per cent. of the steam vaporized. A simple calculation will show that in one of our first-class torpedo boats, if enough space be reserved for fresh water to supply the amount lost in pulverizing the residium, there can still be carried an amount of the latter more than equal in evaporative effect to the total amount of coal now carried. Inasmuch, however, as an evaporator must in any case be supplied for ordinary losses, the simplest way to secure the needed fresh water would be by an increase of evaporative power, with, perhaps, a small reserve tank of fresh water for use at maximum power. If compressed air be used, the weight would probably be less, but the machinery would be more complicated.

The advantages of fuel oil are, greater evaporative power for same weight and bulk, ease of manipulation, perfect control of the combustion to suit the requirements of service, rapidity of starting fires, cleanliness, absence of refuse and the necessity for disposing of it, smaller personnel required in fire rooms, and (if it were in general use) ease and cleanliness in receiving and stowing on board. Against these advantages there are the disadvantages, if residium is used, of cost (if adopted to a great extent), difficulty of purchase away from our own coasts, and (unless used to a great extent) some trouble in receiving on board. If other forms of fuel oil are used, some of these might be obviated, but the question of danger would arise. The balance of advantages is so great where the use of fuel oil is at all practicable that, in the bureau's opinion, the department is fully justified in authorizing the experiments already provided for and any others which will tend to the early practical use of this form of combustible on our torpedo boats and other small vessels.

PERSONNEL.

In order to the highest efficiency of any organization two conditions are of first importance, adequate numbers for

the duty to be performed, and a status of the members commensurate with the importance of the duty and proportionate to that given to others performing kindred work. Applying these criteria to the Engineer Corps of the Navy today, we find that neither is fulfilled, and in consequence the highest efficiency is not attained. In previous reports the bureau has discussed these points at length, and the department has given favorable opinions to the naval committees of Congress, who have been prepared to recommend favorable action, but in the press of business at the end of a Congress, action by the houses was impossible.

As a result of many years of careful observation and study of the situation, my opinion is that two things are necessary to the highest efficiency of the engineer corps.

1. An increase of numbers from 195 officers of all grades to about 300, so divided into the various grades as to give fair promotion.

2. The conferring of actual rank and titles (with the name of corps attached), as is the case for the staff officers of the army.

With regard to the first item, it is to be remarked that the amount of machinery to be cared for has enormously increased with the growth of our new navy, while there has been no increase in numbers in the engineer corps. Prior to 1882, the strength of the corps was 270, but, in that year it was reduced to 170. At the time we had but a fragment of a navy, with machinery of hardly more than auxiliary power. Before the reduction had reached the limit it was stopped by another act, leaving the legal number at 195. In 1882, the largest corps in the service had 736 members, and it was reduced about 100 numbers; but subsequently legislation has been such that the present legal number is 726, or practically no reduction. This comparison of numbers is made simply because these two corps are the ones which are charged with the detailed work of handling the ship and the maintenance of discipline, and to show that on this basis alone the numbers in the engineer corps should be materially increased. However, the number I recommend has been arrived at by a careful consideration of the actual needs of the service.

The economy in repairs to machinery, if this adequate and intelligent supervision were provided, would offset the increase in salaries, to say nothing of preventing the loss of the service of the ships when laid up at the yards for repairs. It is to be noted, also, that it is not, as some might think, more expensive to employ officers on certain kinds of duty on shore, for which their education specially fits them, than to employ civilians, while the efficiency with which the work is done is much greater. In many cases the officers actually get less pay than would be given civilians for the same work.

The importance of having enough officers to properly care for the machinery of our new ships is so great that it is almost a question in my mind whether it would not be wiser to stop building these expensive machines until we have a sufficient number of trained engineers to keep them efficient.

With regard to the second item, what is asked for costs nothing, does not in any way injure any other class of officers or reduce their importance, and would settle a grievance which saps the efficiency of the service, and has really driven some of the best men out of the engineer corps.

The effect of the absence of actual rank is shown by the difference in the provisions of the navy regulations for the exercise of authority by line officers and by those of the staff. The regulations say, "Officers of the line only can exercise military command," and "Officers of the staff shall, under the commanding officer, have all necessary authority," etc. With reference to divisional line officers they say, "the divisions under their command," while with reference to the chief engineer they say, " * * * shall take charge of the division," and, "all duty under his supervision." The regulations thus carefully make a distinction between commanding and having charge of men, and give the engineer officer a distinctly different and inferior kind of authority.

It would seem that in a military organization all orders should be military commands, and such is the case in our army, where staff officers do exercise military command in their own department only, but owing to the distinction which, as shown above, is so carefully made, the logical inference is that, if an engineer officer cannot command his men, his directions to them are legally only requests. The absurdity of the existence of such a state of affairs should be manifest, for the engineers are expected and required to maintain discipline among a large part of the crew, amounting in the larger ships to between 25 and 40 per cent.

The anomalous position of staff officers is well rec-

and understood by the men, whose respect for them and for their authority is proportionately lessened. Nor is this attitude confined to the men, for a case recently decided by the department shows its existence among officers of high rank, and illustrates the importance of proper status for staff officers. In this case it was actually attempted to put commissioned staff officers under the command of an enlisted man. It would seem incredible, if it had not actually occurred, that any officer in authority would attempt to belittle and degrade other officers in this way. How can any set of officers command the respect of the men or exercise authority over them when such things are possible? It is in order that such things may be impossible, and that engineer officers may have the legal right to command their men, that the enactment for the navy of the same law as for the army is requested. This would read: "Staff officers of the navy cannot exercise command except in their own departments, but by virtue of their commissions may command all enlisted men."

A COMPACT TOWING MACHINE.

As an economical factor in the transportation of cargoes on the lakes it has been found that a steamer having in tow one or more large barges can do more work than by any other means. The system of barge towing and having consorts with each steamer was at first a complete innovation, later it was considered that a steamer running alone done equally as good work, especially where she could obtain smart dispatch at each end of the route and even now a few of the lines comprising quite large fleets, hold to this view. The majority of vesselowners, however, recognize the gain to be had in having their steamers tow consorts or barges, so that we are back to the former and original views of the old-time lake shipowners.

In this connection we note the recent adaptation of steam towing machines, an appliance or mechanism which will give and take any reasonable amount of scope according to the surging or strain on the tow line, and the machine is coming into universal use on the lakes, where more towing is done than on any other waters of the world, although it is noteworthy that up to the present the harbor and river tow boats neither use the flexible steel wire tow ropes nor the towing machine, however, the latter is certainly more for lake use, but no tug of any pretensions at all is equipped without having a few hundred fathoms of the flexible steel wire for at least a standby when all manilla ropes give out, though in point of fact and practice only steel wire can be used on the drum of the steam towing machine.

The manufacturers of this valuable aid to commerce and transportation are the American Ship Windlass Co., Providence, R. I., and it is now learned that the firm has introduced a smaller-sized machine than ever has been built before and designed especially for medium-sized tugs.

This special machine is expected to come into general use, as it is very compact, thus taking up very little room on the deck; it is also very powerful, being geared five to one, whereas the large towing machines are only geared four to one. The "popular," which we might term the latest towing device, sits on a head plate of 5 feet 2 inches by 5 feet 8 inches and weighs all complete only 5 tons. The ability of the machine is equal in all respects to tow a weight of from 3,500 to 4,000 tons in addition to the weight of the barges and this is done with a steel wire rope $1\frac{1}{4}$ inches in diameter, so that it is not altogether a baby engine, either. The castings are all made of the best open hearth steel with the exception of the cylinders and this has been done so as to have the machine extremely light and yet to be as strong in every particular as the larger machines for towing purposes manufactured by the same firm.

The American Ship Windlass Co., Providence, R. I., are the sole manufacturers of the unique and successful towing appliance, and they are at all times willing to furnish information relative to this or any other of their well-known specialties.

NOTICE TO MARINERS.

UNITED STATES OF AMERICA—NORTHERN LAKES AND RIVERS—NEW YORK.

TREASURY DEPARTMENT,
OFFICE OF THE LIGHT-HOUSE BOARD,
WASHINGTON, D. C., Nov. 3, 1897.

CHARITY SHOAL GAS BUOY.—Notice is hereby given that, on October 27, 1897, a gas buoy, painted red and black horizontal stripes and showing a white light during periods of 10 seconds' duration separated by eclipses of 10 seconds, instead of a fixed white light, was moored on the southeasterly point of Charity Shoal, northeasterly part of Lake Ontario, to

take the place of the gas-lighted buoy which went adrift about October 17.

Corrected bearings, as taken from Lake Ontario Coast Chart No. 1, of the United States Survey of the Northern and Northwestern Lakes, are: Tibbetts Point Light-House, NE. by E., $7\frac{1}{2}$ miles; Galloo Island Light-House, S. by E. $\frac{1}{4}$ E., $10\frac{3}{4}$ miles; Pigeon Island (Canadian) Light-House, NW. $\frac{7}{8}$ W., $3\frac{1}{4}$ miles.

Bearings are true; miles are statute miles.
By Order of the Light-House Board:
W. S. SCHLEY, Capt. U. S. Navy, Chairman.

LIGHT-HOUSE ESTABLISHMENT,
OFFICE OF THE LIGHT-HOUSE INSPECTOR, 10TH DIST.,
BUFFALO, N. Y. November 8th, 1897.

The buoys in this district will be taken up and replaced with winter buoys on or about the following dates:

Those at Dunkirk, about November 15th.
At Erie, including gas buoy, November 18th.
Sandusky, and island buoys, November 20th.
Maumee Bay, including gas buoy, November 22d.
Detroit River, December 1st.

The Ballard Reef, Limekiln Crossing and Bar Point light-vessels will be left in position as late as circumstances will permit, probably between December 5th and 10th. The position of the latter vessel will be marked by a black buoy.

Waverly Shoal buoy and the buoys in Niagara river will be kept in position as late as the season will allow.

THEODORE F. JEWELL,
Commander, U. S. N.,
Inspector 10th L. H. District.

ST. MARY'S FALLS CANAL.

Report of freight and passenger traffic to and from Lake Superior for the month of October, 1897, including statistics of the United States and Canadian Canals at Sault Ste. Marie, Mich., and Ontario.

EAST BOUND.

ITEMS.	DESIGNATION.	U. S. Canal.	Canadian Canal.	Total.
Copper.....	Net Tons	13,964	550	14,514
Grain.....	Bushels	1,692,062	198,449	1,890,511
Building Stone..	Net Tons	1,608	.....	1,608
Flour.....	Barrels	1,273,387	105,690	1,379,077
Iron Ore.....	Net Tons	921,311	368,328	1,289,639
Iron, Pig.....	Net Tons	3,960	400	4,360
Lumber.....	M. Ft. B. M.	133,644	1,842	135,486
Silver Ore.....	Net Tons	.....	.....	.....
Wheat.....	Bushels	8,015,790	2,393,863	10,409,653
Unclassed Freight..	Net Tons	13,117	4,830	17,947
Passengers.....	Number	672	476	1,148

WEST BOUND.

ITEMS.	DESIGNATION.	U. S. Canal.	Canadian Canal.	Total.
Coal (Hard).....	Net Tons	65,873	16,214	82,087
Coal (Soft).....	Net Tons	542,526	63,935	606,461
Flour.....	Barrels	25	.....	25
Grain.....	Bushels	15,100	.....	15,100
Manufactured Iron..	Net Tons	15,711	4,326	20,037
Salt.....	Barrels	37,788	100	37,888
Unclassed Freight..	Net Tons	49,179	2,247	51,426
Passengers.....	Number	498	276	774

East Bound Freight, net tons..... 1,573,718
West Bound Freight, net tons..... 466,481

Total..... 2,040,199

Craft—United States..... 1,694
Canadian..... 405

Total..... 2,099

Registered Tonnage—United States..... 1,880,808
Canadian..... 392,079

Total..... 2,272,887

Since purchasing the tug Martin Swain James Davidson, shipbuilder, West Bay City, placed her in dry-dock and recalled her all over, inside and outside. He also made all other repairs necessary to put her in first-class shape in every way. The "Swain" is specially designed for wrecking, and is very high between decks, so that pumps and boilers can be placed to advantage. She has been fitted out with new ropes, hawsers, and lines, which also includes a new 10-inch manilla hawser 200 fathoms long, new outfit of shovels, scoops, pickaxes and wrecking tools, including two 14-inch rotary steam pumps. For the balance of the fall the Swain will be in the vicinity of the Detour, where she can render any assistance to vessels that may require her services.

CORRESPONDENCE.

We do not hold ourselves responsible in any way for the views or opinions expressed by our correspondents. It is our desire that all sides of any question affecting the interests or welfare of the lake marine should be fairly represented in THE MARINE RECORD.

STRANDINGS ON LAKE HURON.

To the Editor of The Marine Record:

The frequent strandings of vessels on Lake Huron in fogs do not reflect much credit on the officers of such vessels, as outside of the 20-fathom curve no obstacles are found on this lake. Vessels keeping in more than 20 fathoms of water will positively avoid stranding in a fog. But the practice of crawling along the shore in close proximity to it, courting danger, in order to save half an hour or an hour's run, brings about disaster. The principal cause of this daring spirit is, that the charts of Lake Huron contain sailing directions which it is not safe to follow in clear weather, much less in a fog, and which for men not trained in navigation are the only guide. Variation, deviation, leeway, and current, are unknown quantities in the reckonings of such persons, supposing compasses, if adjusted at all, to be adjusted for all corrections. These fellows, however, have push in them, sometimes bordering on fool-hardiness, and that is all there is wanted by their employers, whose vessel property is generally well insured.

Being guarded by the 20-fathom curve it is absolutely impossible for a vessel to strand on Lake Huron. Therefore, as long as officers of vessels are not familiar with the timely and judicious use of the lead, underwriters had better put up a wire fence all along the shores of the lake, in 20 fathoms of water, to prevent untrained persons from stranding in a fog.

The judicious use of the lead requires safety curves to be drawn on the chart, and the shaping of courses so as to keep the vessel always outside of the safety curve. On account of unavoidable errors in compass and log, and of courses and distances being more or less influenced by currents, it is safe to assume an error of $\frac{1}{2}$ point in course, to be applied on the chart to the right as well as to the left of the intended course; and also to assume an error in the distance of one-tenth the distance run, the vessel supposed to be that much ahead or sideways of her reckoning, for the purpose of finding the distance at which the safety curve may be struck and the lead should come into play, if such errors in position prevail. On the solution of this problem depends the timely use of the lead. From all of which follows, that on courses running nearly parallel and close to the safety curve, the lead has to be kept going all the time, to prevent running inside the safety curve.

In striking a safety curve, and being compelled to follow it up, a correct compass is of great moment, as by correct courses in combination with soundings the trend of the curve may be found, and the whereabouts of the vessel be determined, or at least a reliable line of position. As a rule, courses should not approach any obstacle nearer than four to five miles, when sufficient sea-room is left.

Applying the foregoing to a trip from Cheboygan to Port Huron magnetic courses may be shaped as follows, with the 20-fathom curve as safety guard: From off Cheboygan 1 mile north, E. $\frac{1}{8}$ S. 10 miles to the 20-fathom curve; SE. by E. $\frac{3}{8}$ E. 47 miles when Presque Isle light bears WSW. $\frac{3}{8}$ W. 5 miles off; SE. $\frac{3}{4}$ S. 24 miles when Thunder Bay Island bears SW. $\frac{1}{2}$ W. 8 miles off; S. by E. $\frac{1}{4}$ E. 142 miles to a point on the 10-fathom curve NE. $\frac{3}{4}$ N. $13\frac{1}{2}$ miles from Fort Gratiot.

If there be any danger of running inside the safety curve, it will consist in the vessel being carried by the current farther south or west than the reckoning indicates. The first turning point off 40-mile point may be verified by the lead, so as to make sure of the vessel being in 20 fathoms. Starting on the second course the lead may be used for a distance of five miles to make sure of being in more than 20 fathoms. At a distance of 10 miles, and farther on, more than 30 fathoms should be found, and the 30-fathom curve be taken as a guide. If less than 30 fathoms be found, the vessel is too far south and must steer easterly. The nearer Presque Isle the closer should the vessel be kept to the 30-fathom line up to about 5 miles from the turning point, in order to make good the intended course. When the distance of 47 miles is run out by log the course changes to SE. $\frac{3}{4}$ S.

Now, if the vessel is some miles west of her reckoning, soundings taken on this course about 10 miles from the start and farther on, will show less water than the chart, indicating the vessel being south of her intended course, and therefore she has to steer more easterly, keeping the lead going to make sure of not getting into less than 20 fathoms. To make up for the vessel being too far west, it may be advisable to overrun the distance of 24 miles a few miles, and then start on the course S. by E. $\frac{1}{4}$ E., being careful from the start to keep the vessel in not less than 20 fathoms, and changing course to ESE. $\frac{1}{2}$ E., if necessary, until in deeper water; when starting again on S. by E. $\frac{1}{4}$ E. This course established for 5 or 6 miles the lead may rest, until the reckoning shows the vessel to be about 15 miles from Point aux Barques, when the lead comes into play again on continuing the course up to the 20-fathom curve. From the soundings and distances thus obtained between the 30 and 20-fathom curve it will soon be known whether or not the vessel is west of her intended course. If west from it, she may glide along the 20-fathom curve on an ESE. course, by keeping the lead going, changing course gradually to S. by E. until this course is fully established on the 20-fathom curve, continuing on this course with occasional soundings, takes the vessel safely to the 10-fathom curve NE. $\frac{3}{4}$ N. $13\frac{1}{2}$ miles from

CONTINUED ON PAGE 10.



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THE lake fisheries have received particular attention this year and although owing to restricted legislation the fields for collection of lake trout and white fish, which have been confined to Lakes Superior, Erie and Ontario, still a larger collection than in the past is anticipated. And as this is such an important article of food the fishery commissioners could not do better than stock the several lakes with all the lake trout and whitefish possible.

THE late Henry George said: "On a capstan bar or a top-sail halyard a good song tells like muscle, and a 'Marseillaise' or a 'Battle Hymn of the Republic' counts for bayonets. A hearty laugh, a noble thought, a perception of harmony may add to the power of dealing even with material things." Mr. George besides being a printer had done some sailing in his time and the foregoing sentiment might show that he had chewed a strand of rope yarns and drank fully a pint of Stockholm tar.

THE next thing we will learn is that the British will hold to their bottoms being used exclusively in their coasting and colonial trade. The United States leads the way in this connection and now Russia follows, her enactments to take effect January 1, 1900. The English Board of Trade is also likely to exclude foreigners from taking command of British vessels, although there are hundreds of aliens now in charge of such property. The movement is on foot to render foreigners ineligible to pass the examination for officers in the British mercantile marine and such a course seems but equitable in view of the discrimination practised by other maritime powers against alien talent, skill or labor.

BREAKWATERS, piers, jetties, etc., are usually constructed for the benefit of shipping frequenting the port and to facilitate general commerce in this direction. Now it appears that we only look to see what manufacturing or stationary enterprise can be benefited. It has been said that the Lake Shore railroad, whose lines parallel the lake shore at many points, have been mainly instrumental in getting miles of breakwaters built by the Federal government at a first cost of millions of dollars and an annual upkeep costing no small amount, for the sole purpose of protecting their roadway or the artificial embankment on which their rails are laid. If the government intends to make a safe port of a dangerous one by building a harbor of refuge or securing suitable and secure anchorage for the general commerce and universal benefit, then the Federal funds might be rightly applied, but, when spending millions to protect the frontage of a local tinplate works or even the roadbed of a grasping railroad company the misapplication of the people's money is only too evident.

RAIL AND WATER RATES.

The decision of the United States Supreme Court just handed down yesterday affirming the ruling of the lower courts in the Interstate Commerce Commission against the Alabama Midland & Georgia Central Railway and others, establishes a precedent of great importance to New York and the Atlantic Coast by way of the Great Lakes and the Erie canal. According to a Washington dispatch the decision is that the railroads are at liberty to make a cut in rates to compete with the waterways, without giving notice to the Interstate Commerce Commission.

The decision arose out of charges by citizens of Troy, Ala., that the companies were disregarding the long and short haul clause of the interstate commerce law. The point at issue was whether, when there was competition between railroad and water transportation, the roads must file lower rates with the Interstate Commerce Commission, and it was decided in the negative by the court.

The opinion of the court was handed down by Justice Shiras. The action was begun before the Interstate Commerce Commission in 1892 upon a petition from the Board of Trade, of Troy, Ala., alleging a discrimination by the roads against them, and also held that preference in rates should not be given except upon the authority of the commission. The court overruled the commission on both points, holding, first, that the competition is one of the most obvious and effective circumstances that make the condition under which a long and short haul is performed substantially dissimilar.

Justice Shiras stated, however, that the decision was not intended to relieve common carriers from the restraints of the third and fourth sections of the law, but its purpose was that these sections are "not so stringent and imperative as to exclude in all cases matter of competition in determining the questions of undue and unreasonable preference."

Upon the other point, as to whether railroad companies can be relieved from the operation of the long and short haul clause of the interstate commerce act without first invoking the consent of the commission, Justice Shiras said:

"We are unable to suppose that Congress intended to forbid common carriers in cases where the circumstances and conditions are substantially dissimilar from making different rates until and unless the commission shall authorize them to do so."

A NEW ILLUMINANT.

Consul Deuster, at Grefeld, Germany, reports to the State Department a discovery made there, which, it is said, will revolutionize the methods of illumination.

It is an incandescent gas. A single jet of ordinary size can emit a light of much more than one thousand candle-power and fine print can be read at a distance of one hundred feet. The inventor says the cost for a light of 1,500 candle-power is only four and one-half cents per hour, while that for an ordinary electric light of 400 candle-power is fourteen cents per hour. This invention will no doubt be of invaluable service to the light-house department of this as well as other countries, as it has long been a mooted point to determine which was the best, most reliable and economical illuminant for light-houses.

LAKE-BUILT STEAMERS FOR ALASKA.

The steamer J. J. Hill may be taken to the Yukon. Her owners are preparing to send her to salt water as soon as possible, with a view to continuing the trip via the Straits of Magellan to the Pacific and then up the Yukon as far as the stream is navigable for a boat of the Hill's size.

The Hill has been in a Buffalo dry-dock several days getting a new bottom. She ran ashore down the St. Lawrence some time ago and was so badly damaged that it will take about \$15,000 to fix her up.

Mr. J. J. Hill, one of the owners, said this week: "It was only a short time ago that I was in Toledo with one of the owners of the Hill. We were talking over plans for sending her down the St. Lawrence to the sea when in came a telegram stating that she was ashore on Long Point, Lake Ontario. That put an end to our plans for awhile."

The Hill was built in 1892 by the Morleys at Marine City, and is 768 net tons, classed A 1* and valued for insurance purposes at \$70,000. She was built for salt water purposes and is classed in the coast and ocean classification registers. When the Klondike excitement came up an effort was made to sell her to a syndicate that talked of taking her to the gold fields and negotiations have been carried on since, but

so far as can be learned nothing has come out of it and if she gets away this fall the owners will have to send her.

It will take a few days yet, Mr. Hill thinks, to finish repairs. Then the weather may be against her, but if all is favorable the Hill will be sent down to Montreal and given the first cargo for New York that can be found on the way. Either coal or lumber will be taken. In New York a second cargo will be shipped for the Pacific coast.

FOUNDERING OF THE IDAHO.

On Friday night last, Nov. 5th, the wooden steamer Idaho left Buffalo bound for Chicago with a general cargo and a crew of 21 hands all told. She proceeded all well until she got several miles to the westward of Long Point, when she commenced to leak and in trying to 'bout ship so as to run under the lee of Long Point she foundered in comparatively shoal water, two of her crew hung on to the foremast and after several hours exposure were picked up by the steamer Mariposa and landed safely in Buffalo, the only survivors of the lost vessel.

The Idaho was built in Cleveland in 1863, to the order of the Western Transit Co., Buffalo, and registered 907 tons and being controlled by the New York Central railroad had been well kept up and had always done excellent service, though owing to the dullness of the season she had made only one trip this year, after receiving extensive repairs subject to inspection by the U. S. local inspectors who certified that she was in a good and seaworthy condition.

The names of the two men rescued are, Louis La Force, second mate, and William Gill, a deckhand; those lost were Alexander Gillies, captain; George Gibson, first mate; William Clancy, engineer; Nelson Skinner, assistant engineer; Louis Gilmore, watchman; Richard McLean, wheelman; Robert Williams, wheelman; A. J. Richard, lookout; Henry Shannon or Thompson, lookout; Conrad Blenker, fireman; William Gregory, fireman; unknown, fireman; Edward Smith, deckhand; ——— Bell, deckhand; Unknown, deckhand; Fred Memfort, oiler. Unknown, porter; John D. Taylor, steward; John Leahy, assistant steward.

Mr. Douglass, the agent of the Western Transit Co. at Buffalo, has an expedition out searching for the bodies of the lost men and a careful patrol has been kept up so that any bodies discovered may be duly buried. The vessel and her cargo are considered a total loss.

THE AMERICAN "SOO" CANAL.

It has not yet been decided to close the new American lock at Sault St. Marie on the 15th of the month, as requested by Supt. Wheeler. The purpose of his request was to allow of more time before the coming of ice in which to set the new gates and it is not unlikely that this will be done. Figuring from the information at hand as to the number of boats that pass through, the engineer officials say there is no doubt the Canadian lock could easily accommodate everything. The closing of the American lock would put the American tonnage entirely dependent on the Canadian lock. In case of damage to that lock, or slowness in passing vessels, the American lock could be thrown open at a few hours' notice, the officials say.

When the alterations to the American lock are completed and the present miter sill removed, the depth of water will be increased from seventeen to twenty-three feet. This will allow vessels carrying ore from Lake Superior to South Chicago to make new records. Vessels bound down with ore can also load nearly a foot deeper, or the draft allowable over the Ballard's reef improvement—about eighteen feet; so that records will be made all along the line. The work of removing the boulders from Ballard's reef vicinity will occupy the remainder of the season and all of next season, so that vessels of the four to five hundred feet class will be restricted to that extent for another year or more.

"SOO" RIVER RULES.

The large number of remissions of penalties which have been made by department officials of fines levied for alleged violation of the speed rules in the St. Mary's river have about convinced the department that the regulations are in need of amendment in order to enable vessels under all circumstances to take such precautions as are necessary for their own safety without transgressing the law. A case in point has just arisen in which Gen. Spaulding has remitted a fine of \$200 and forfeiture of the steamer Centurion. This vessel was fined for exceeding lawful speed in the St. Mary's river, but upon the statement of her master it appears that she could hardly have done otherwise. According to the evidence the Centurion had just passed the locks at the

"Soo," and having no cargo, heavy winds on her quarter took her so far out of her course that she was obliged to bring up at half speed to gain steerage way. The evidence in this case is strong enough to secure a full remission of the penalties, and yet if the facts are as stated the department officials are unable to understand upon what principle of common sense the speed rule is based.

Gen. Spaulding has refused to remit a fine of \$200 levied on the steamer Norseman for alleged failure to give the proper signal to another vessel, pending the receipt of the special report in the case made by Inspector Bailey. The department is obliged to make so many remissions that it insists upon having all the facts before acting.

LAKE FREIGHTS.

Coal freights are now going to the notch where they ought to have been months ago, and 50 cents is being paid to the head of the lakes. Sandusky to Duluth, 55 cents, and for Ashland, 60 cents. These are the top figures, for as low as 40 cents has been taken this week. It appears that 50 cents is the going rate for Lake Michigan, with very slow chartering.

The grain rates from Chicago or Duluth are simply away off, and from the latter port rule at $1\frac{3}{4}$ to 2 cents on wheat, while the latest charter from Chicago shows 1 cent on oats to Buffalo, although there is an indication that this rate will soon improve.

Anthracite coal from Buffalo pays 40 cents to Duluth, and 50 cents to Ft. William, while the Lake Michigan rate is still at 40 cents.

There is practically nothing doing in iron ore and the last quotations still hold good, as most of the tonnage is chartered ahead at former rates, and the indications are that the ore shipments for the remainder of the season are nearly through, that is, for outside tonnage.

MARITIME LAW.

THE CITY OF AUGUSTA.

HANDY et al. v. ADAMS.

Circuit Court of Appeals, First Circuit. April 15, 1897.

APPEALS IN COLLISION CASES—CONFLICTING EVIDENCE—FINDINGS BELOW.—Where the judge below has recorded his impression that certain testimony given by witnesses in his presence was of doubtful value, and on an examination of it by the appellate court there is nothing to suggest that the trial judge overlooked anything appearing on a careful comparison of the whole record, his conclusions will be entitled to great weight.

COLLISION—BURDEN OF PROOF—LOOKOUT.—Where a lookout is shown to have been absent from his post for a large part of the critical time during which the vessels were approaching each other, and was therefore unable to observe a considerable portion of the essential occurrences in controversy, the presumptions arising from this lack of vigilance are of very substantial importance; especially where it appears that the master of the vessel, instead of being in command, of the deck, was himself at the wheel. In such case, if the vessel is unable to sustain the burden of showing fault in the other party, such inability must be laid to her own misfortune or negligence. The Charles L. Jeffrey, 5 C. C. A. 246, 55 Fed. 685, applied.

SAME—ERRORS IN EXTREMIS—LUFFING.—Where a vessel going closehauled finds that another sailing vessel running free is crossing her course so close under her bow that she will probably not go clear, and thereupon luffs, she will not be held in fault, even if this was a mistake, as the rule of errors in extremis applies.

SAME—EVIDENCE—ADMISSIONS.—While the courts seldom put much reliance on the evidence of officers or seamen as to alleged admissions by officers or seamen of the hostile vessel, yet, when such admissions are in harmony the reasonable probabilities of the case in other particulars, they may be of value in suggesting a solution as between conflicting proofs.

ADMIRALTY APPEALS—COSTS.—While, perhaps, there may be no appeal from ordinary questions of costs within the common jurisdiction of taxing masters, yet there may be such an appeal when the force of a statute or some positive rule of law is involved, though it concerns only costs.

Appeal from the District Court of the United States for the District of Massachusetts.

THE GEORGE W. CLYDE COMMERCIAL TOWBOAT CO. V. THE GEORGE W. CLYDE.

LUCKENBACH ET AL V. SAME.

MORNING JOURNAL, ASS'N V. SAME.

District Court, E. D., New York, March 5, 1897.

SALVAGE SERVICES—COMPENSATION.—Services of tugs which came promptly to the assistance of a vessel in immediate danger of sinking in deep water from collision, and in some 15 minutes, without danger to themselves, beached her in a safe place, held to be salvage services for which \$1,000 should be awarded.

SAME.—The action of a tug in going voluntarily to a vessel injured by collision, merely to take off her passengers

and crew, while other tugs summoned by the master, and adequate for the purpose, are engaged in rescuing her, is not a salvage service.

These were libels filed by the Commercial Towboat Co. by Lewis Luckenbach and others, and by the Morning Journal Association, against the steamer George W. Clyde, to recover compensation for alleged salvage services.

BENEDICT, District Judge.—These are actions to recover salvage compensation for services rendered in towing the steamship George W. Clyde at the Narrows on the afternoon of February 29, 1896. The steamer George W. Clyde, a coastwise iron steamer, 250 feet long, having on board some cargo and passengers, outward bound, when passing through the Narrows, in a dense fog, encountered a collision which stove a large hole in her port side, and put her in danger of sinking immediately. When struck she was in the middle of the channel at the Narrows, where the water was from 60 to 80 feet deep. The fog lifted almost immediately after the collision, and two steam tugs, the Joshua Lovett and the Dudley Pray, belonging to the Commercial Towboat Co., chanced to be opportunely within hailing distance. These towboats were immediately hailed by the master of the George W. Clyde, and, coming alongside of the Clyde on her starboard side, they passed their lines to her, and at once towed her to shore, some 800 to 1,000 feet away, where she was beached in safety. These towboats were made fast in about three minutes and the vessel was beached in about 15 minutes' time. There was no risk encountered by the tugs, no extraordinary exertion was put forth, and the towage was of an ordinary character. The service was, however, rendered promptly, and it saved the Clyde from the danger of sinking in deep water. I think that salvage compensation may well be awarded these tugs, and, in my opinion, \$1,000 will be sufficient salvage compensation for them both. I do not apportion the sum between the two boats, for the reason that they are owned by the same company.

At about the same time the steam tug Scandinavian, a tugboat belonging to the libelants Lewis Luckenbach and others, came up to the port bow of the Clyde. The object of her approach to the Clyde is plainly stated by Mr. Quail, who was on board of the Scandinavian for the Morning Journal, and who claims to have been in command of that tug as owner *pro hoc vice*. This witness said: "I ordered Capt. Olsen to lay the Scandinavian alongside the Clyde, so that we might take off the crew and passengers." Again: "The tug's boarding ladder was put up to the side of the Clyde for no other purpose than to allow the crew and passengers of the Clyde to descend in safety to the tug." Again: "It was because of my desire to take these people off that the Scandinavian was first made fast to the Clyde, so as to keep her alongside until she got the people off." There is testimony showing that, when the Scandinavian approached, she approached in a shape that would render her assistance useless. But, however that may be, she got out one five-inch line, and made fast to the Clyde, and, after the crew and passengers were taken off, she no doubt, by means of her line, applied some power to the Clyde. But she received no orders from the Clyde, was not asked to render assistance, and the evidence shows plainly that her assistance was not needed. The two tugs that already were there, that were called at the request of the captain of the Clyde, and whose lines those on the Clyde had taken and fastened, were abundantly sufficient to put the Clyde in a place of safety. Under such a state of facts, in my opinion, the Scandinavian is not entitled to salvage—First, because her services were not needed nor furnished at the request of the captain of the Clyde; second, because, according to the testimony of Quail, the only object of her exertion was to take off the crew and passengers. Services of that character do not give rise to a claim for salvage against the ship. In my opinion, therefore, the claims of the Morning Journal and of Lewis Luckenbach and others for services rendered by the Scandinavian must be rejected. The decree will be that the libel of Lewis Luckenbach and others be dismissed, without costs; also the libel of the Morning Journal will be dismissed, without costs. On the libel of the Commercial Towboat Co. the decree will be for \$1,000 and costs.

A NEW REEF LOCATED.

An unknown reef 600 feet long and 100 feet wide, one-half mile east-south-east of the north side pier light and in range with the water tower, was located at Manitoba this week by the captain of the tug Arctic. The reef is from 16 to 19 feet under water, with a rocky bottom. Temporary buoys were placed at each end of it and the government authorities were immediately notified of the existence of this new danger to navigation.

RAISING THE CAYUGA.

Capt. James Reid has closed the second season of his work on the sunken steamer Cayuga with the view of raising her, and it is extremely doubtful whether he has made much actual progress toward the accomplishment of his object. Apparently the captain has misjudged the lifting capacity necessary to float the craft and her cargo. In 1896 he utilized a surface pontoon and four steel pontoons, calculated to lift 2,000 tons, intending to obtain the additional lifting capacity through the inflation of the waterbottom and boilers of the sunken steamer. Little could be accomplished, however, because of the unsteadiness of the surface pontoon in open water, where calms are exceptional. Therefore he had four additional steel pontoons built to replace the troublesome surface pontoon, and with these he has operated throughout the present season. Capt. Reid claims that he made no effort to lift the Cayuga, but this appears to be doubtful, as the wooden pontoon has figured in the work, plainly indicating that the eight steel pontoons and inflation of the waterbottom and boilers had failed in the accomplishment of the desired object, and that the surface pontoon, having a lifting capacity of 1,000 tons, had been brought into service as a re-enforcement. But even with all these appliances nothing direct has been accomplished, and his friends now doubt Capt. Reid's success. He certainly was favored with a season of exceptionally fine weather for his difficult work, and cannot look in that direction to excuse his failure. Of course Capt. Reid will resume his operations next season, and in point of fact he has not yet entirely given up operations on the sunken steamer, but the weather is likely to be dead against him from this time on.

EASTERN FREIGHT REPORT.

The eastern freight report furnished the MARINE RECORD by Messrs. Funch, Fdye & Co., New York, states as follows:

The inquiry for prompt grain tonnage to Cork, f. o., referred to in our last report, still continues, and, but for the scarcity of near-by steamers, our list of charters would doubtless show an appreciable increase. Re-charters for early November loading have been made at 3s. 10½d., and a further advance could doubtless be established if tonnage were available. The inquiry continues fairly active for December, but practically stops with that month. Large boats are in fair request at rates last quoted, but owners' demand of part cargo of oats somewhat hampers these trades. With a concession of a portion of general cargo, which owners are, however, still loathe to concede, some little advance could doubtless be secured. The condition of cotton freights in Atlantic ports is generally unchanged, viz.; a fair inquiry for tonnage continues, but at rates below owners' views—hence list of charters has been very light; in the Gulf ports, especially at Galveston, the interruption of railroad traffic caused by the yellow fever scare has brought about a temporary demoralization of freights, and the shifting of some waiting tonnage thence to the northern ports. Some further fixtures for case oil for the far east have taken place at freights favoring shippers. Deal freights show a decided decline; for timber freights from the Gulf, inquiry for the moment is dormant.

Business in sail tonnage during the past week has been rather light, and confined principally to charters for case oil to the far east, but there is no appreciable change in the condition of the market, and rates continue fairly well maintained.

BAY CITY SHIPYARDS.

Captain Davidson will soon lay the keel for another wooden tow-barge. She will be a sister ship to the one now building, and a consort to one of the large wooden steamers in the course of construction at the yard.

The new barge will measure 312 feet over all, 300 feet length of keel, 45½ feet beam, and 26 feet depth of hold and have a carrying capacity of 3,500 gross tons at 17 feet draft.

The two steamers and two tow barges will be ready to leave the yard at the opening of navigation, and will form one of the finest wooden fleets on the lakes.

The four boats at this yard, together with the big steel ships contracted for at Wheeler & Co.'s will make a total of seven large vessels to be built during the winter. The total tonnage of the boats will be 33,400 gross tons. The construction of the new boats will give employment to nearly 2,500 men during the entire winter.

Wheeler & Co. are getting everything in readiness for the three boats which are to be built at their yard this winter for the Bessemer Steamship Co.

The immense weight of the boats requires extra strong foundations, and 200 piles are being driven to support the keels.

The ocean tug William H. Brown will be ready to leave the yard for New Orleans about November 12. The tonnage of the Brown is placed at 470.98 tons gross and 320.27 net.

H. C. BURRELL,

Marine Reporter.

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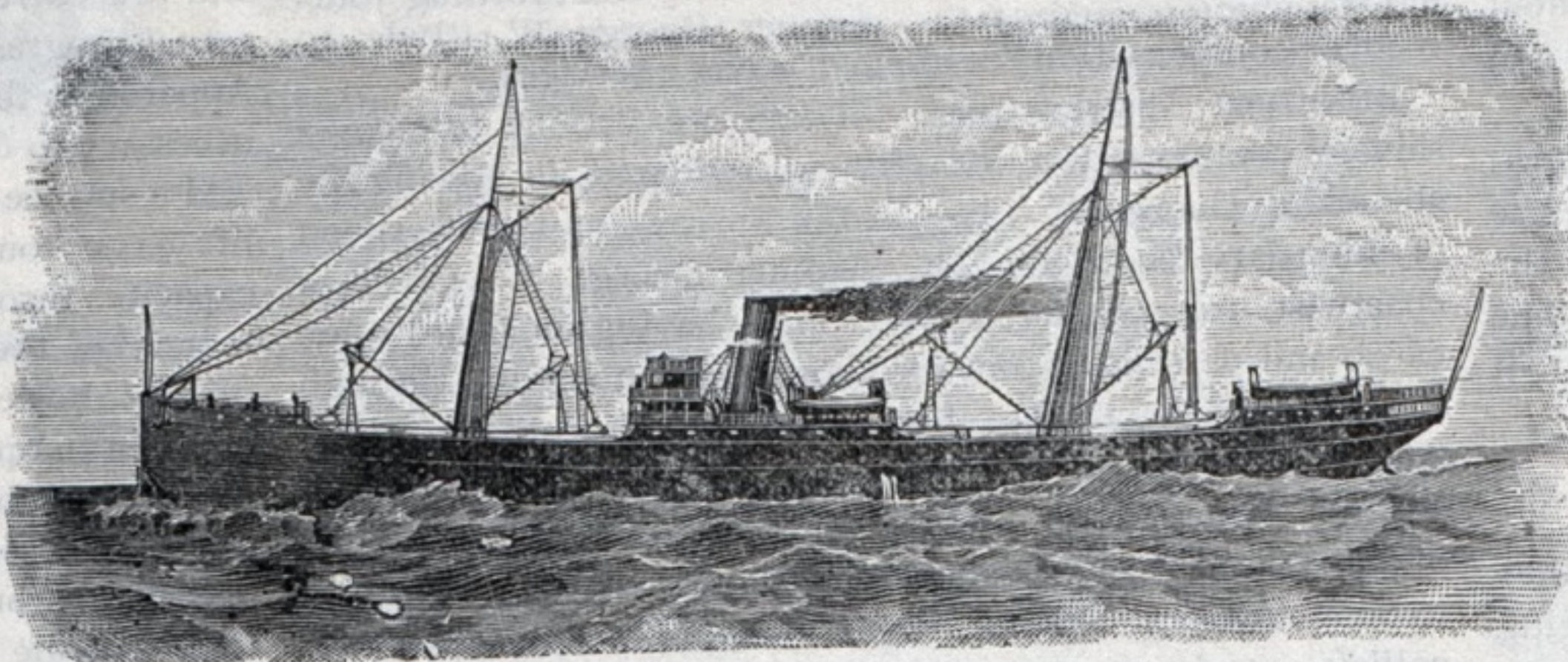
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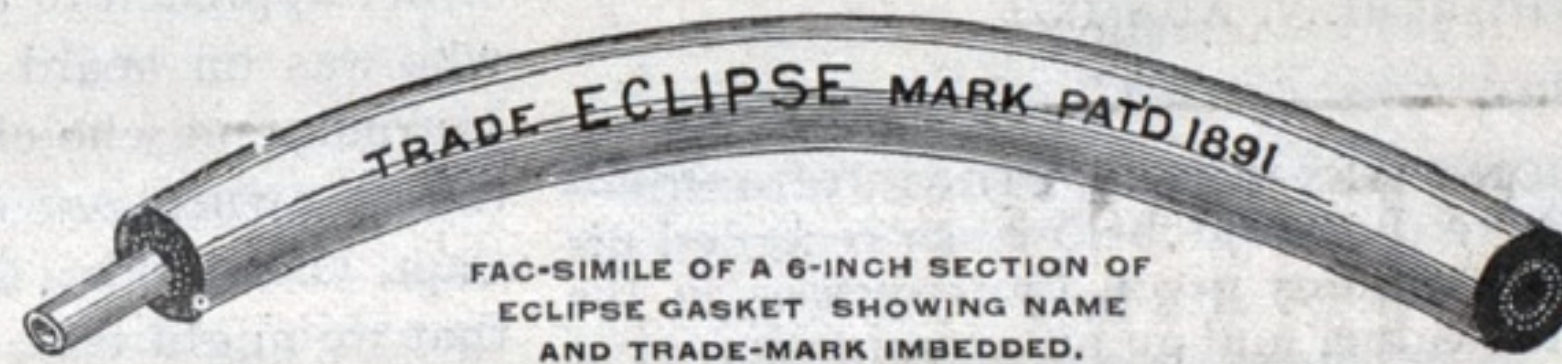
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AND ✻
MAN HOLES



103-195 Bank Street, CLEVELAND, O.

202-210 South Water Street,
CHICAGO, ILL.**STRANDINGS ON LAKE HURON.**

CONTINUED FROM PAGE 7.

Fort Gratiot; the distance per log cutting no figure after the course on the 20-fathom line has been established, the lead giving all the information wanted.

The total distance on this run exceeds the distance on the usual route but 6 miles.

With the current not setting southerly or westerly, but in some other direction, the vessel has plenty of sea-room left on the courses laid out.

The turning point off Thunder Bay island being the only place where some difficulty in keeping on the course S. by E. $\frac{1}{4}$ E. may be experienced; this difficulty is easily overcome by increasing the distance on the course SE. $\frac{1}{4}$ S.

On the return trip with the 20-fathom curve as guard and guide all difficulties in a fog are easily surmounted.

Strandings on Lake Huron in a fog are due:

1. To not drawing safety curves in the chart; 2, to not using the lead in time and with reference to safety curves; 3, to shaping courses too near the land or some obstacles; 4, to compasses, the errors of which are not known; 5, to the lack of fog buoys at the safety curve for making a harbor or narrow passage from out of the deep water; 6, to the carelessness and incompetency of officers. JOHN MAURICE.

Chicago, Nov. 8, 1897.

**THE DISPLAY OF WIND SIGNALS ON THE
GREAT LAKES.**

The signals adopted by the Weather Bureau for announcing the approach of windstorms are as follows:

The storm signal (a red flag eight feet square, with black center three feet square) indicates that the storm is expected to be of marked violence.

The red pennant (8 feet hoist and 15 feet fly) displaced with flags indicates easterly winds—that is, from northeast to south, inclusive, and that the storm center is approaching.

The white pennant (8 feet hoist and 15 feet fly) displayed with flags indicates westerly winds—that is, from north to southwest, inclusive, and that the storm center has passed.

When the red pennant is hoisted above the storm signal, winds are expected from the northeast quadrant; when below, from the southeast quadrant.

When the white pennant is hoisted above the storm signal, winds are expected from the northwest quadrant; when below, from the southwest quadrant.

Night storm signals.—By night a red light will indicate easterly winds; a white light above a red light will indicate westerly winds.

The information signal consists of a red or a white pennant, displayed alone, and is a warning that winds dangerous to tows and small vessels may occur at the station displaying the signal. The red pennant indicates easterly winds and the white pennant westerly winds. No night information signals are displayed.

The hurricane signal (two storm-signal flags, red with black centers, displayed one above the other) indicates the expected approach of tropical hurricanes, and also of those extremely severe and dangerous storms which occasionally move across the lakes and the north Atlantic coast. No distinctive night hurricane signal will be displayed, but when this signal is ordered during the day and is not lowered or changed before dark, the night storm signal will be displayed, the direction to be determined by the information contained in the message accompanying the order to hoist.

When orders to hoist this signal are received at any Weather Bureau station, every effort will be made by the officials and employees of the service to give the warnings the widest possible distribution, and all vessels will be notified that it is dangerous to leave port.

The officers of the Customs Service, the Life-Saving Service, the Revenue-Cutter Service, and the Light-House Service have been directed by the Secretary of the Treasury to assist the Weather Bureau in this matter by displaying the hurricane signal, and by disseminating, as far as practicable, any information regarding storms and hurricanes that may be furnished them by that bureau.

THE RUSSIAN COASTING TRADE.

A very important measure in regard to the coasting trade between Russian ports, and having for its object to benefit vessels sailing under the Russian flag, was sanctioned by the Emperor last May, and will take effect on the 1st of January, 1900. Heretofore, the Russian coasting trade had been free to vessels from any country, but after the said date it will be limited to Russian vessels, with the exception of the transport of salt from the ports of the Black Sea and Sea of Azov to the ports of the Baltic. A similar law had already been passed in 1830, but, on account of the insignificance of the coasting trade then, it remained a dead letter, and said trade was left unprotected from foreign competition until now. The coasting trade has developed to a large extent, and Russia, recognizing, in common with other countries, the

importance of the commercial marine, is making great efforts to encourage it and is adopting measures to place her coasting trade exclusively in the hands of her national flag.

Owing to the isolated situation of the seas surrounding Russia, separated as they are by foreign territories, the Russian coasting trade must cover long distances, such, for instance, as the United States, trade between New York and San Francisco, which must pass around South America.

Although not enjoying any privileges, the Russian coasting trade was always increasing, and during the period from 1888 to 1895 it more than doubled.

In regard to freeing the Russian coasting trade from foreign vessels, the Journal of Commerce and Industry, of St. Petersburg, says:

By removing foreign flags from the Baltic-Black Sea, White Sea-Baltic, and Black Sea-Pacific Ocean communications, our navigation without doubt will greatly develop. Besides transit cargoes, which will be in the exclusive possession of Russian subjects and Russian vessels, foreign cargoes can be forwarded under the most favorable conditions. In estimating the influence with the transport of cargoes in transit may have on the success of the navigation trade, it must be considered that the lines between our seas include important foreign connections where a considerable amount of our cargoes are transported on foreign vessels. Therefore, it is to be concluded that a well-developed coasting trade will prove a good preparatory school for a further, wider, and more independent activity of our merchant marine in the international market.

The Messenger of Finances asserts, and is trying to prove by statistics, that the prohibition of foreign vessels will not injure the Russian coasting trade and that the Russian vessels will be sufficient even in case of increased commerce.

BOOK REVIEW.

We have received this week a work for review titled, "Power Catechism," and after a careful look-over of its 200 pages, consider that the book is worthy of more than the usual notice given to technical publications. Mr. F. R. Low, editor of Power, the well-known New York publication, is to be congratulated on his work of compiling so valuable a treatise on pertinent, modern and every day questions, therefore, so that our readers may form a clearer idea of this valuable production we herewith give a list of the subjects treated

under separate chapters. Classifications of boilers; boiler setting, fittings and attachments; riveted joints braced and stayed surfaces; physical properties of steam; combustion and firing; heating feed water; the safety valve; the slide valve; engines in general. There is also a mass of valuable data and information given on pulleys, belting and shafting, the Corliss engine, horse power of engines, steam-piping, chimneys, etc. Issued by the Power Publishing Co., World Building, New York. Price, \$2.

VISIBLE SUPPLY OF GRAIN

As compiled for The Marine Record, by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY. Bushels.
Buffalo.....	1,130,000	2,572,000	1,316,000	144,000	969,000
Chicago.....	3,657,000	1,973,000	1,704,000	878,000	455,000
Detroit.....	327,000	59,000	20,000	51,000	16,000
Duluth and Superior	2,548,000	735,000	499,000	783,000	694,000
Milwaukee.....	236,000	343,000	54,000	28,000	134,000
Montreal.....	404,000	58,000	426,000	90,000	27,000
Oswego.....	89,000	106,000	.....	.....	69,000
Toledo.....	428,000	486,000	407,000	78,000	.....
Toronto.....	57,000	.....	4,000	.....	11,000
On Canal.....	540,000	301,000	140,000	267,000	521,000
On Lakes.....	1,971,000	2,510,000	2,241,000	212,000	836,000
On Mississippi.....	.....	.....	.....	.....	.....
Grand Total.....	29,046,000	45,103,000	15,389,000	3,818,000	4,115,000
Corresponding Date, 1896.....	59,923,000	19,294,000	12,443,000	2,679,000	5,942,000

While the stock of grain at lake ports only is here given, the total shows the figures for the entire country except the Pacific slope.

SHELBAK WANTS "POSSYTIIV RANK."

(Army and Navy Journal.)

Edditer "Army & navy jurnle" Oct, 15, eighteen hundred 97, dere.

If ime not in the brig wen Congrus metes I is goin to Washentun to boss a bill to giv ships ritters possyitiv rank. All they has now is neggytiv rank. I dont no wot neggytiv rank is but I cant find no wun hoo nose wot possyitiv rank is eether & thats wy I want it.

Them dam drug slingen aphthycariz they had nuthin but neggytiv rank & now they is Farmersshootis witch I spose is

possytiv rank. Ant a ships riter s good as them? And wy shud he be cust with a name witch he nose hes ashamed on wen he wants to be corlld Commander—Callygrafist.

The publik nedes to be eddicated abowt this & Ime goin to do it. Hoo luks after orl the moreen litteratur of the world includen the "army & Navy gurnle?" Ships ritters. Hoo rote influenza in the see pour? a ships riter. Hoo rote a history of the war of eighteen 12? another ships riter. Hoo wrote Lucy's seeminship? a ships riter. Has enny of these ritters been given the possyitiv rank of Commander—Callygrafist? Nun.

We is down-trodud. We is howlin for the help of orl the ritters all over the wurd to elleyvate us owt uv ower morph-tifyen posishun in the U. S. Navy. We noo-wot it wos wen we went into it & thot no ships ritters ennyweere else get haf the chans we do but that dont cownt. Shel a retchid little wun stripee be aloud to bos over men who rite vally-able wurks of litserytoor on the birth deck? Emagen a ship with a Shaky spear & a Byrum & a Milltown and a lot more sech on the muster role bein kermanded by wun of them cadets wot was the tale of his clas in ithtks & englesh stud-is. Its siknin! Shal we ask permishn to go ashoar from a pampurd dashpot hoo never rites anythen but wine chex? No!

Hasnt the Burow of Navvygashen for yeres made every captain send in 276 red ink ruled reports rittun on 1 side of the paper about everythin every day & sum moar evry nite & wen he gets nervis prostrashun moar yet to egsplaen wy he has it? Cud eny modun ship be of endy possibl yuse without them reports? Cud she fite or be fit? In thunder tones the Burow of Navvygashun sez no! Hoo then is the most necessary man aboard? the ships riter. Wy then shud the man wot dus nuthen but sine them reports have possyitiv rank wen we wot can rite them is chizzled outer it?

Diplomatic and soshul funkshuns it ower fort as much as any of them bloated stripers. True i poit sez "You may scrub you may scour the can as you will, But the smell of the oil will stick to it still."

but Juliet Seezer sed "A roast by enny other name will smel as swete" and Juliet Seezer conkerad the wurd & nu wot possyitiv rank is. Mister Edditer the pen is mitier than the sord every day in the weke & you and I nose it. Down with them tar buk-ets! We wants ower gloryus flete commanded by a Vise Ad-mul—Callygrafist & the chap for that posishun is ever yures.

T. AP CATESBY SHELBAK,
Ships riter.

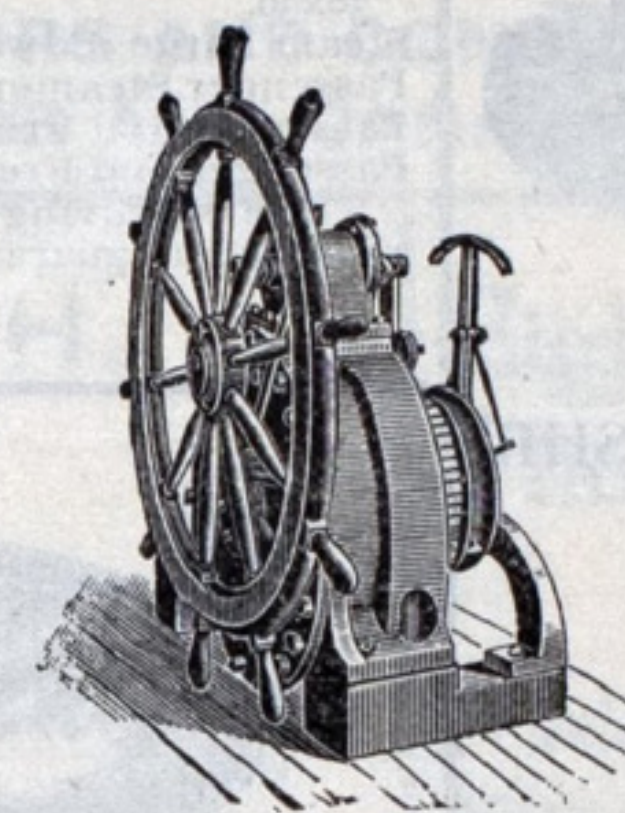
Receiver's Sale of Tugs.

The entire fleet of tugs of the Vessel Owner's Towing Company to be sold by order of the Circuit Court of Cook County, Illinois. Bids for all or any of these tugs will be received by the receiver until 9 a. m., November 22, 1897. All bids to be accompanied by a deposit of 10 per cent. of the amount of bid. The tugs can be seen by applying to the receiver.

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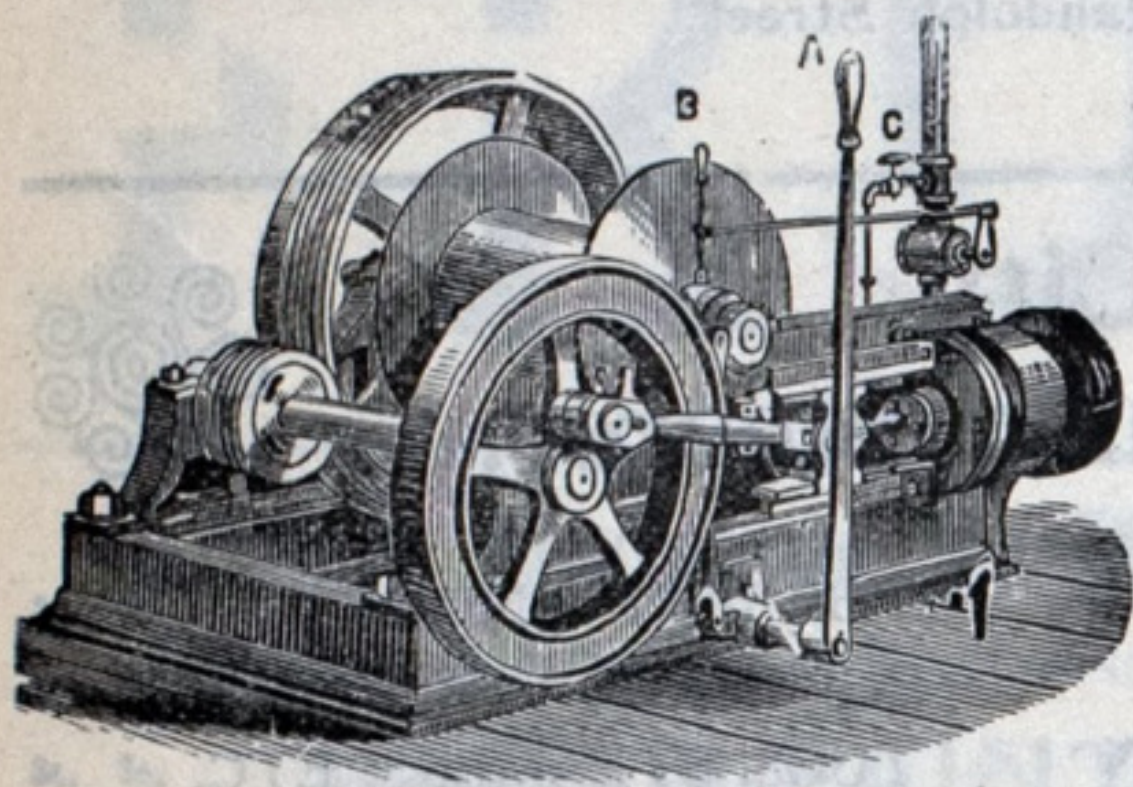
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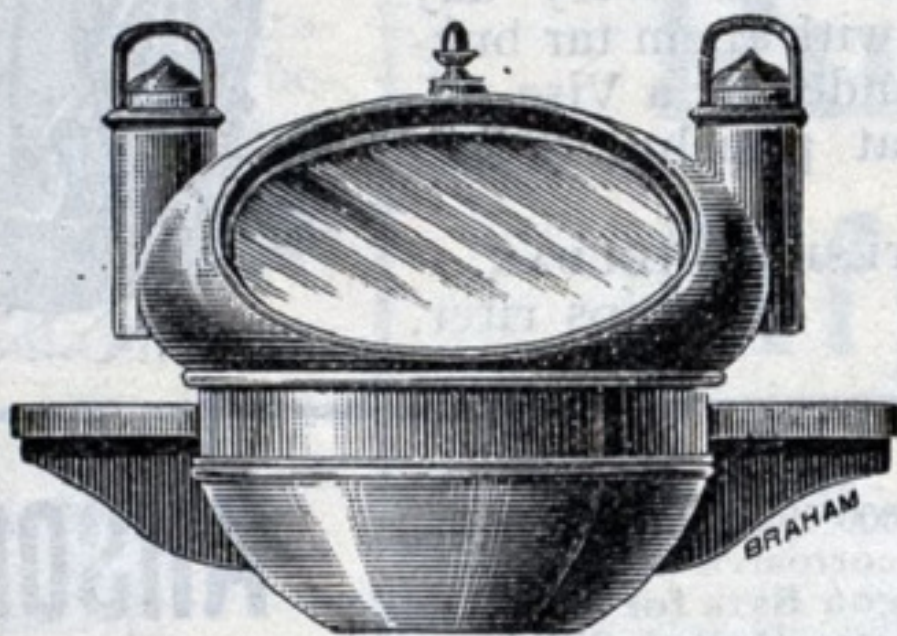
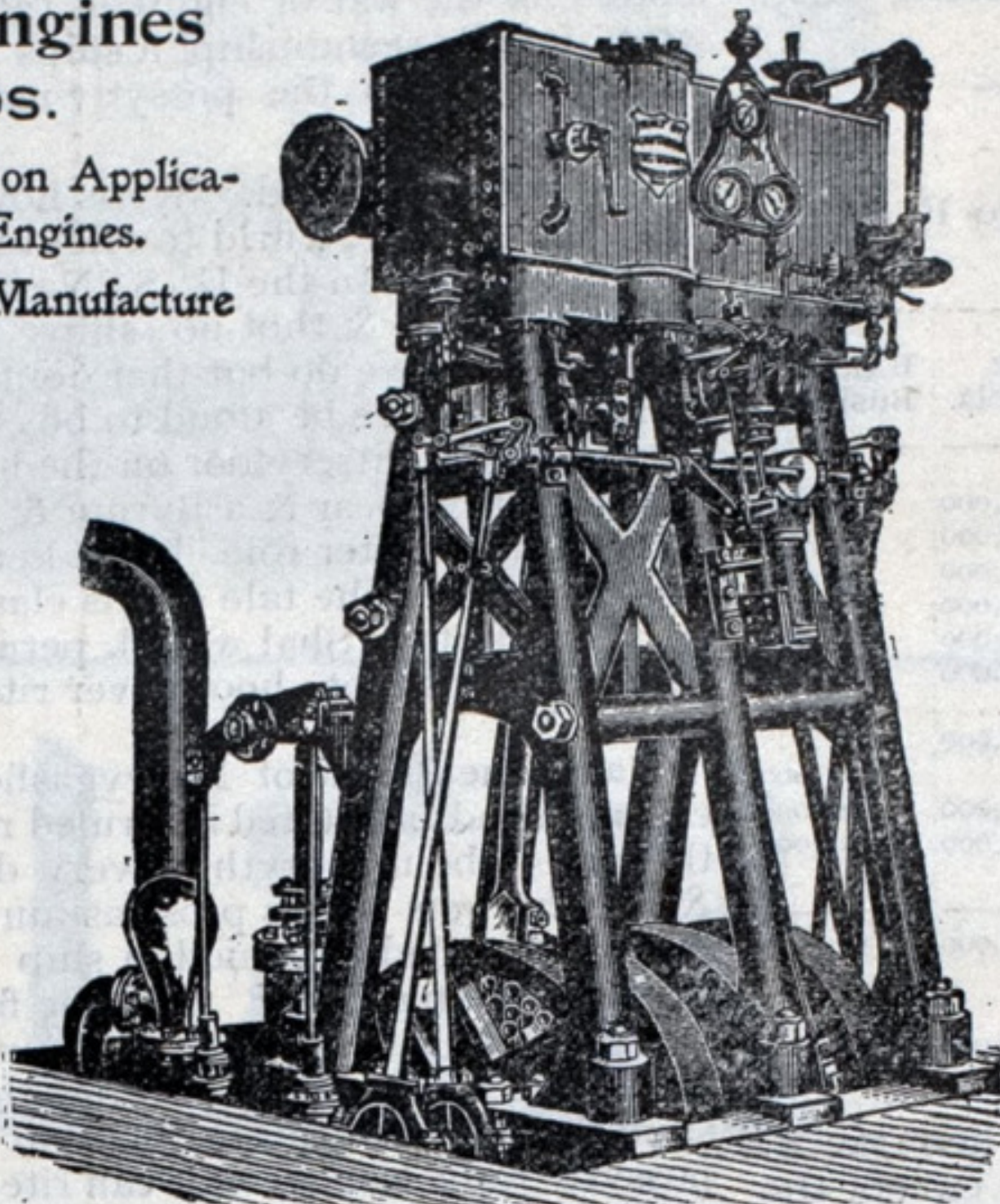
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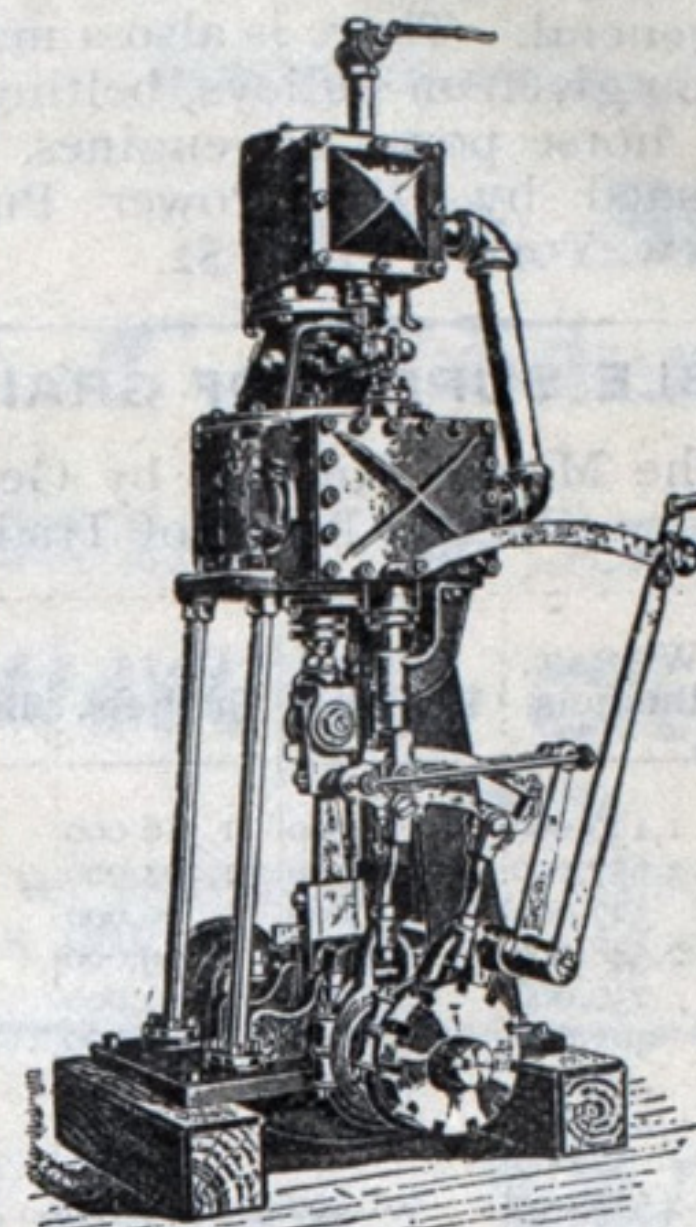
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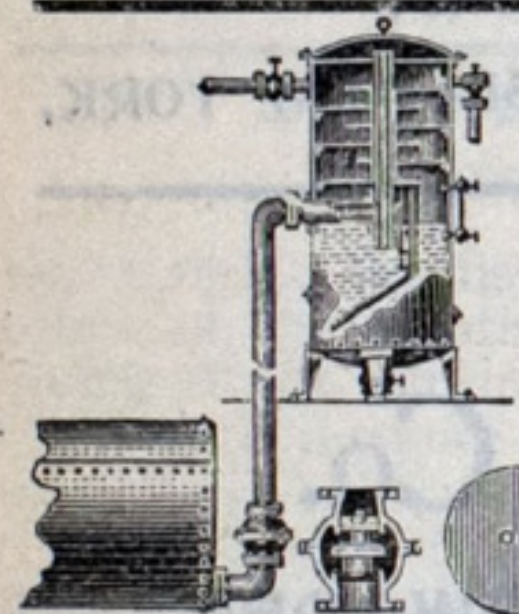
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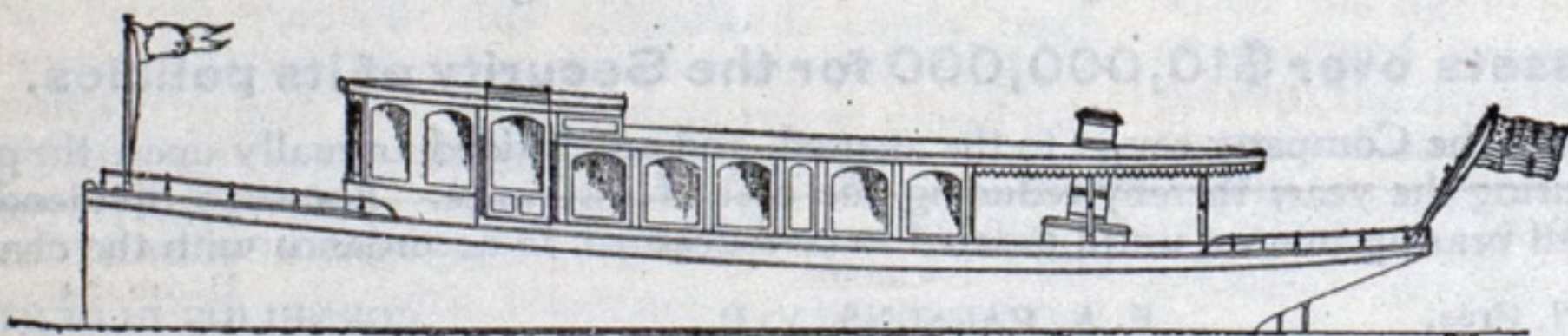
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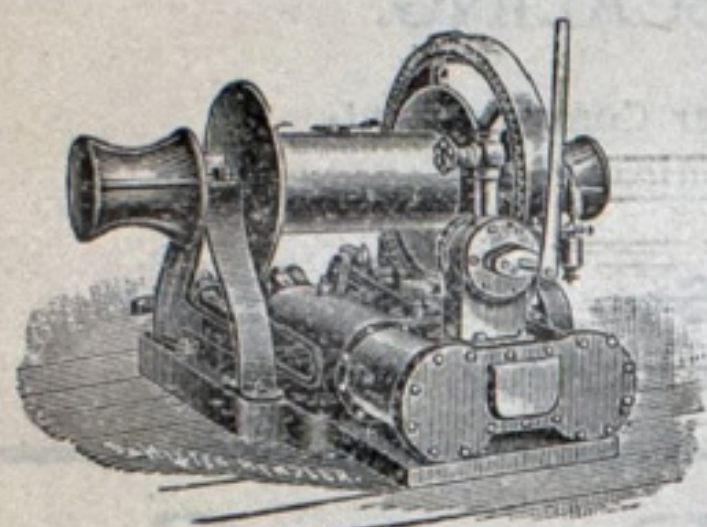
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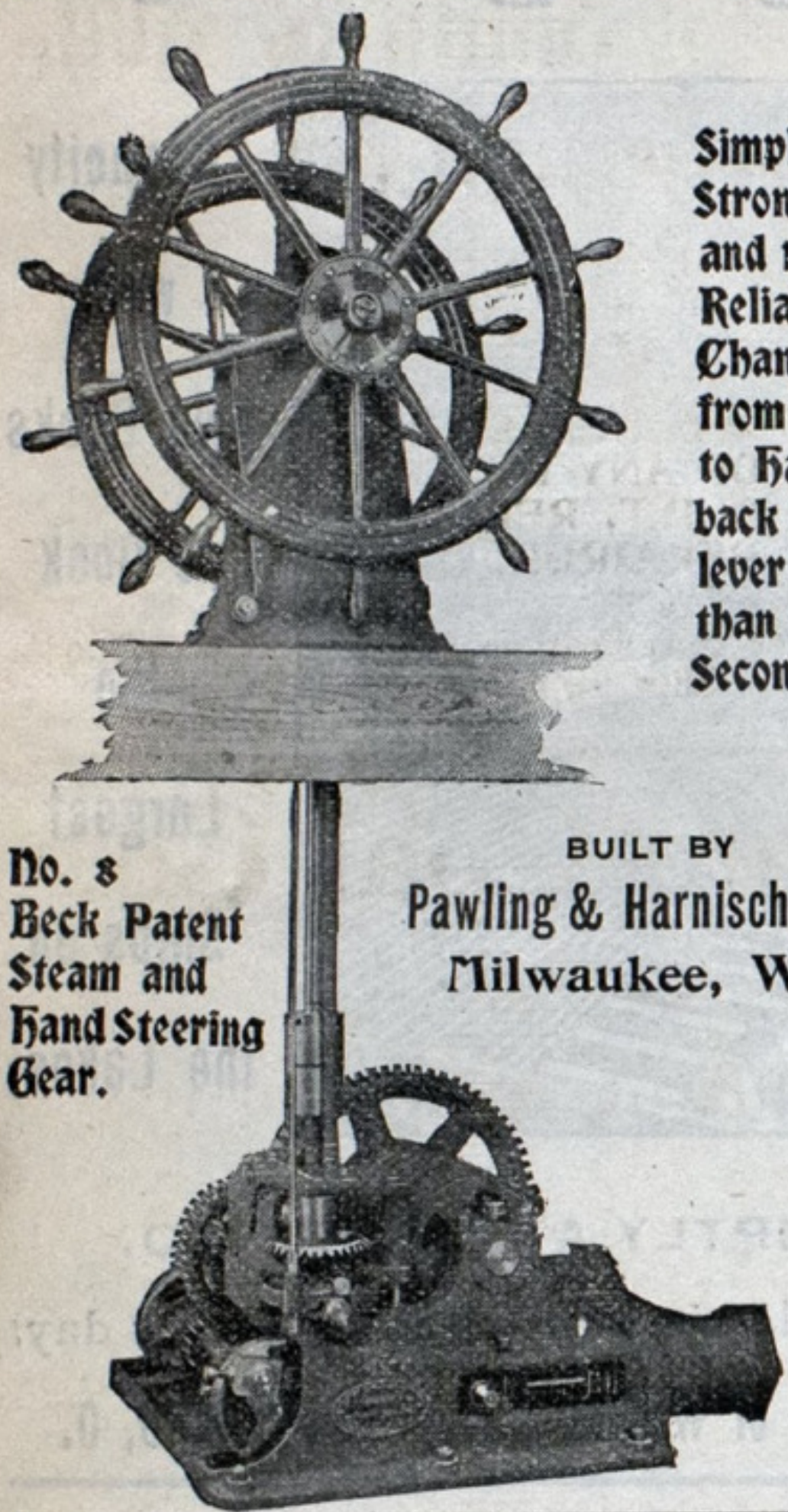
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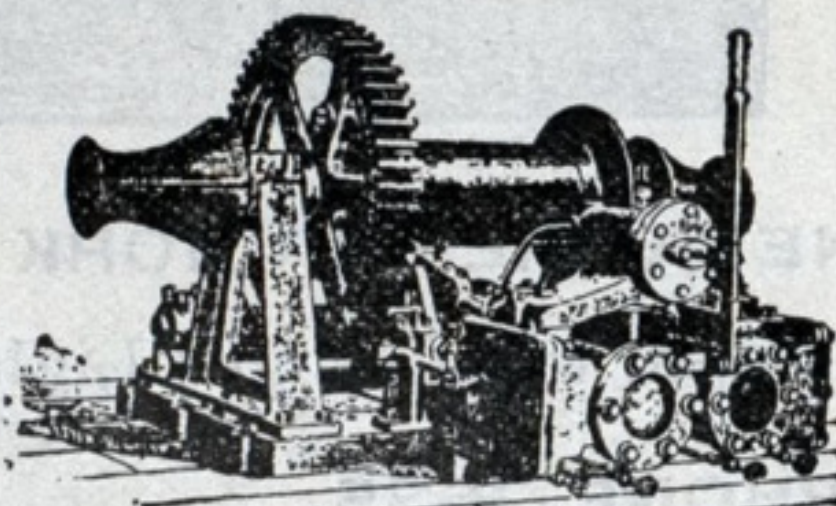
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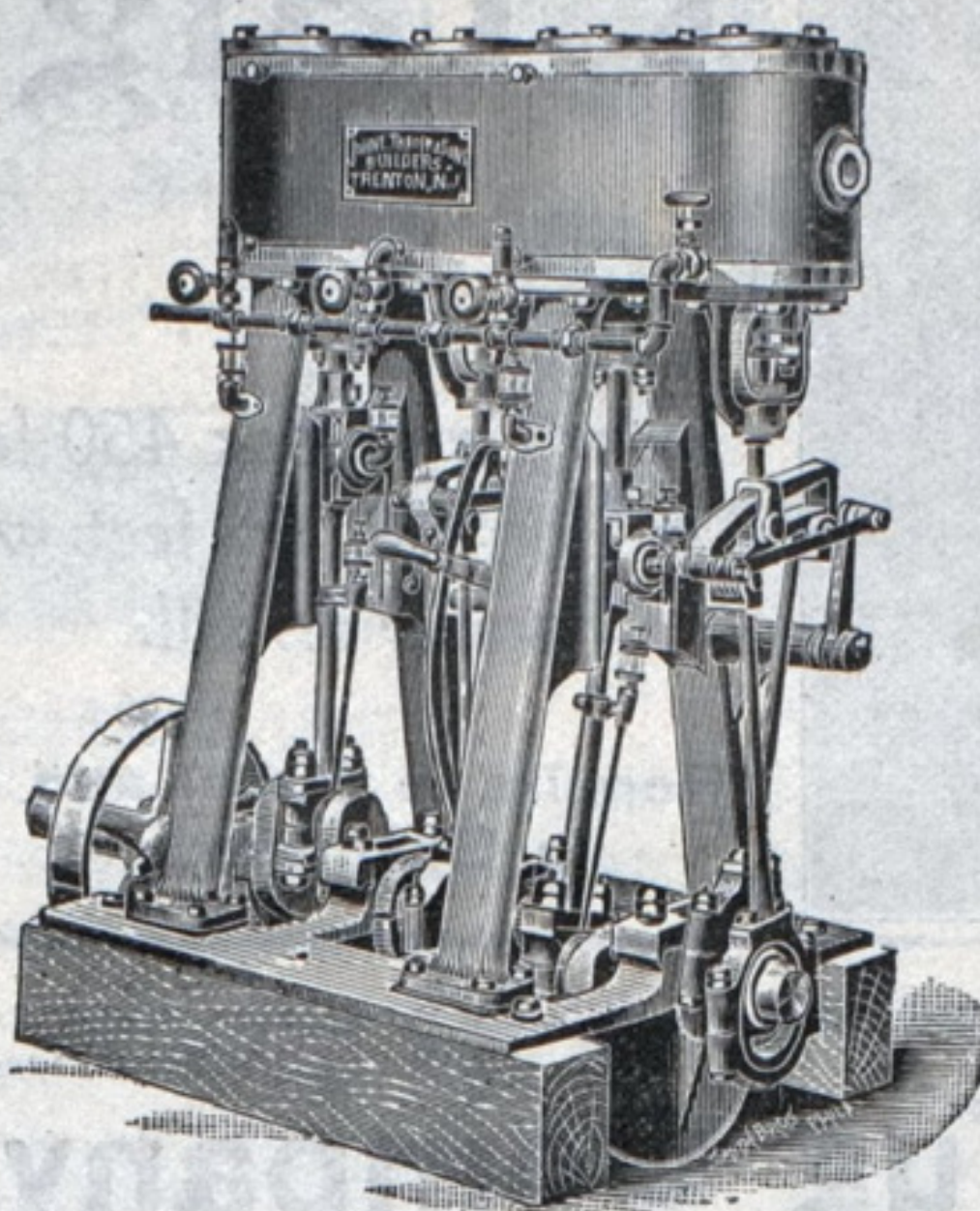
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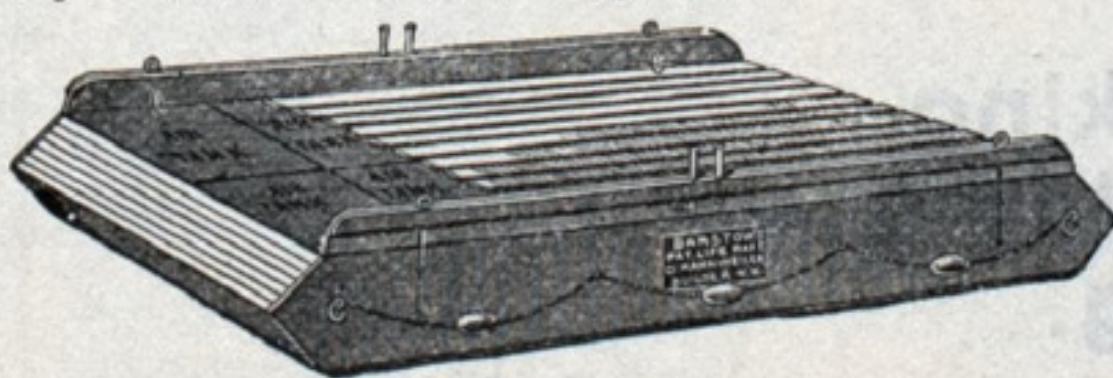
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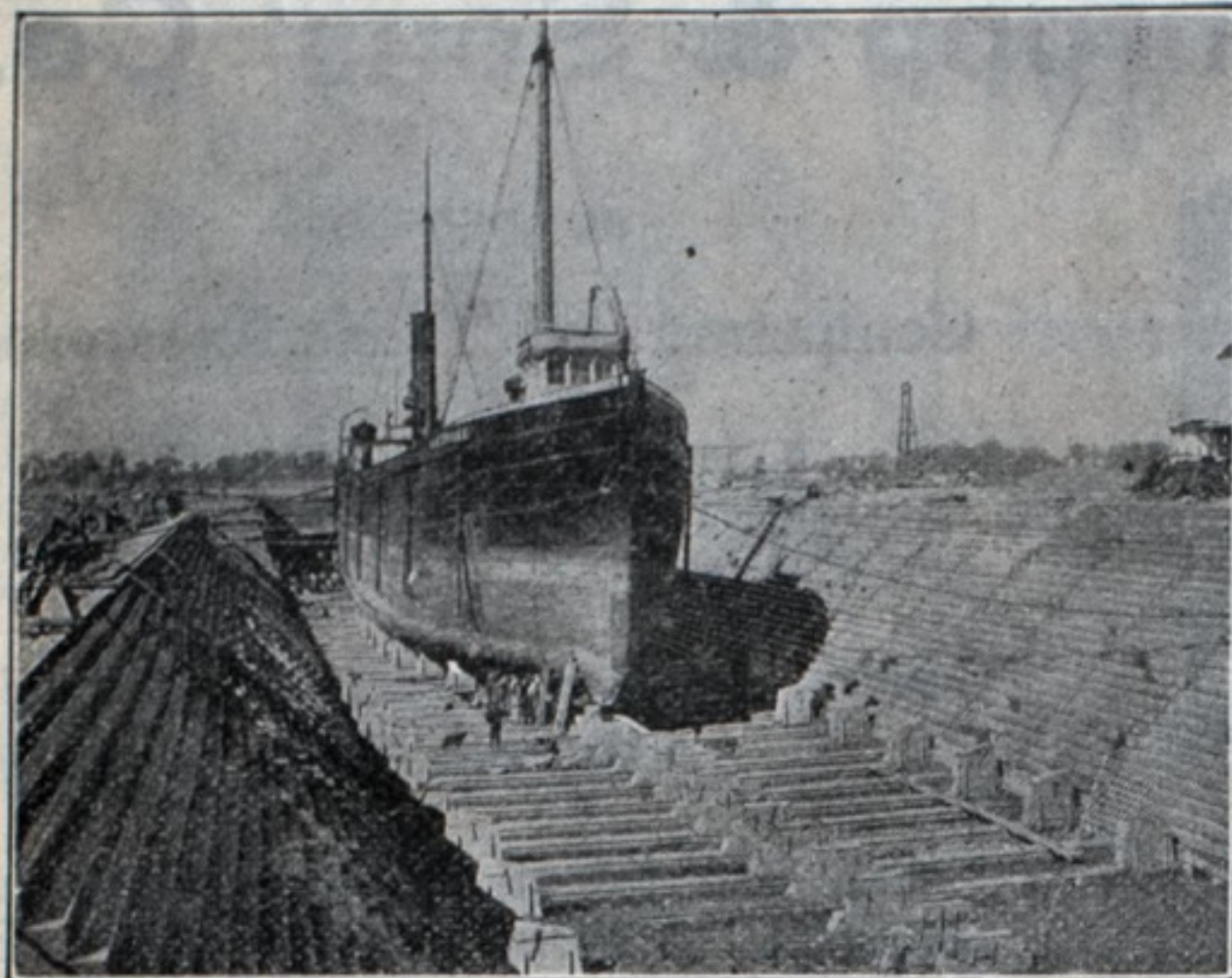
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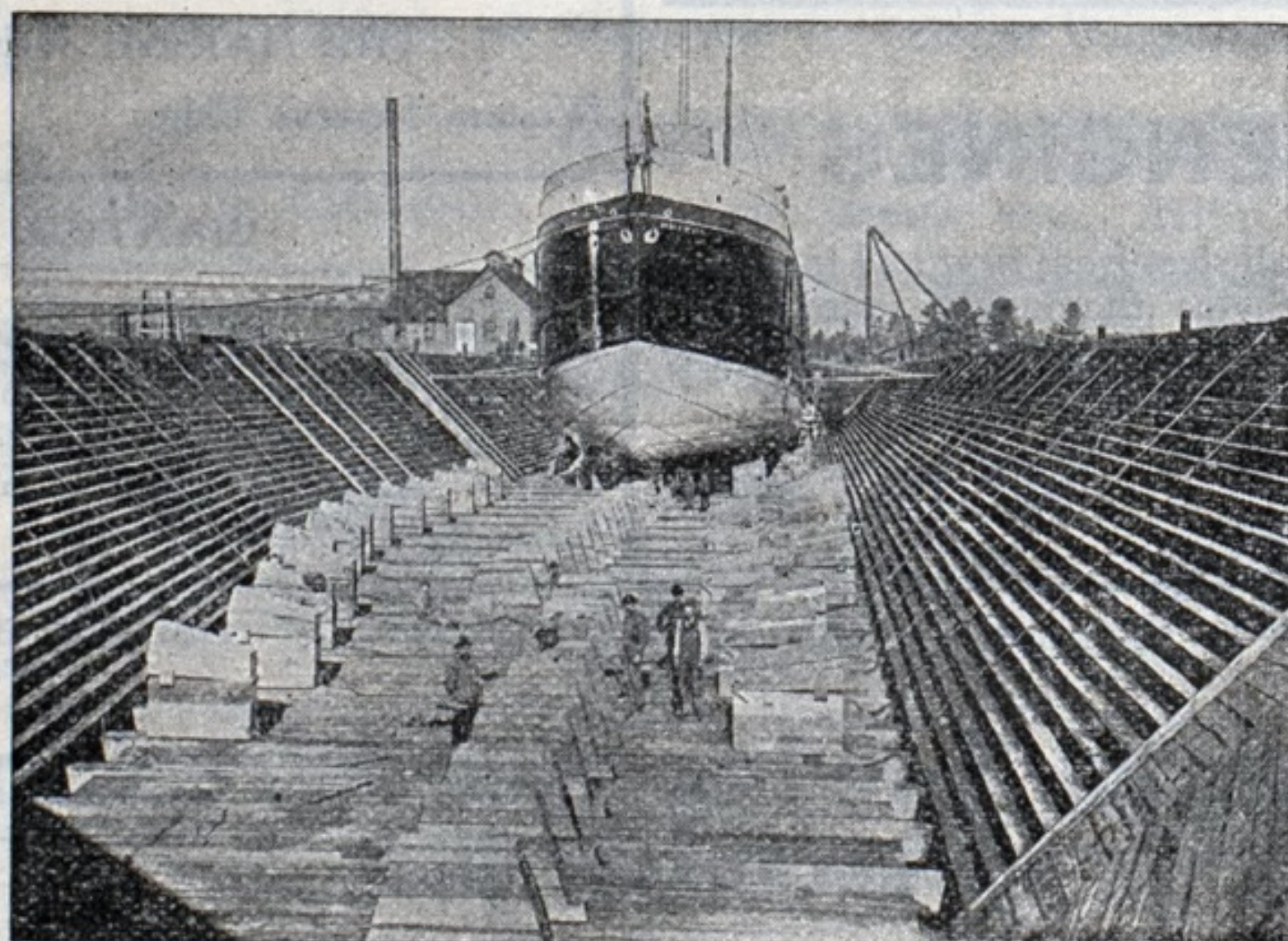
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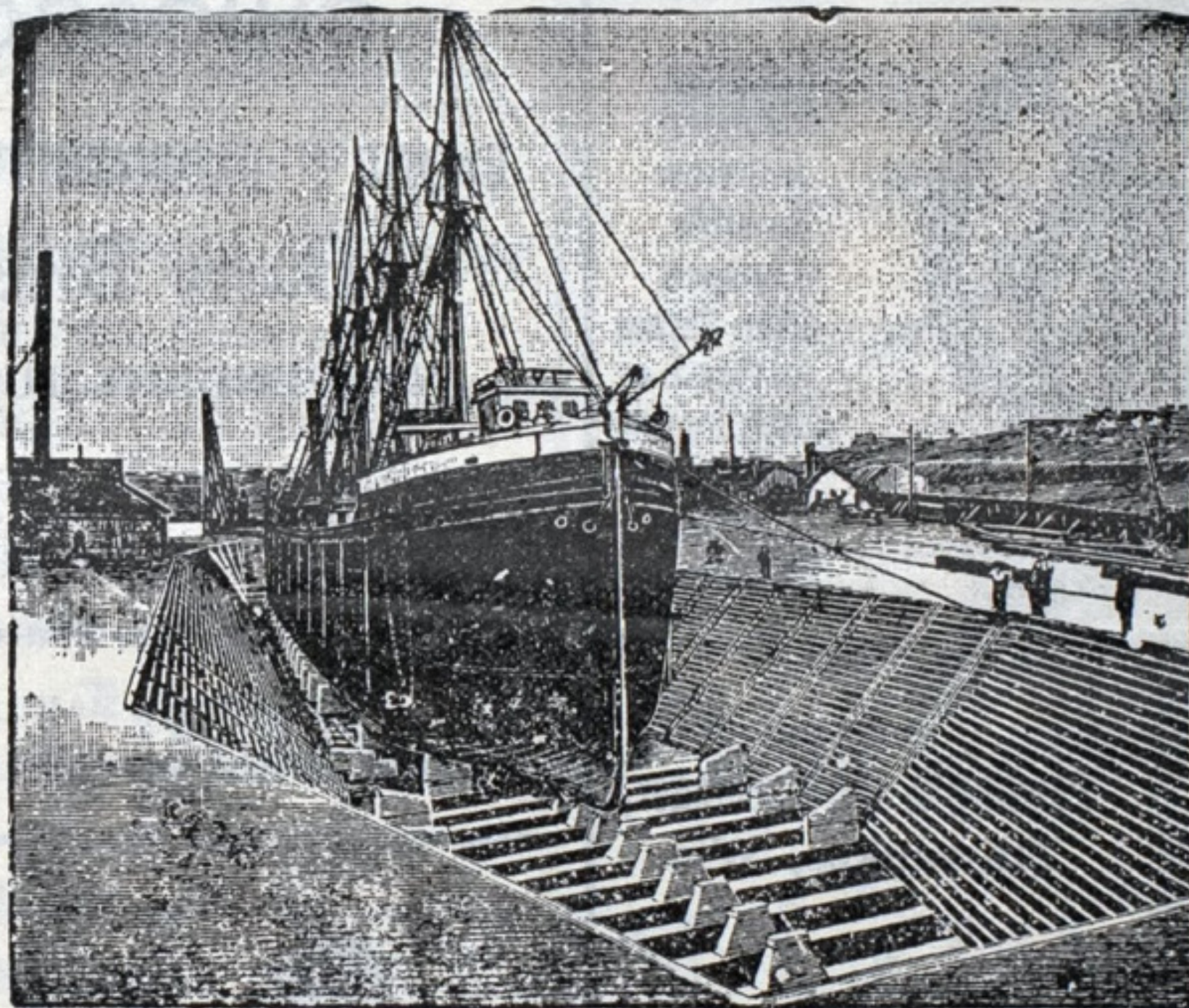
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